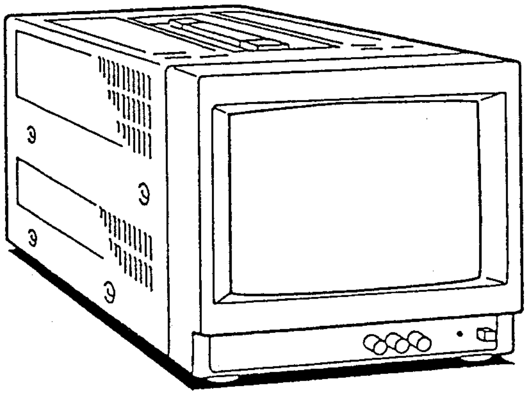
SSM-9040P

SERVICE MANUAL

AEP Model
Chassis No. SCC-F09E-A



MICROFILM

TRINITRON® COLOR VIDEO MONITOR

SONY®

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(CAUTION)

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SECTION 1
OPERATION

1-1. OPERATING INSTRUCTIONS (Pages 1-1 to 1-3 are the duplications of the operating instructions.)

English

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Dangerously high voltages are present inside the unit. Do not open the cabinet. Refer servicing to qualified personnel only.

Precautions

On safety

- Operate the unit only on 100 – 240 V AC. Use only the supplied AC power cord. Do not use any other type.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it further.
- Unplug the unit from the wall outlet if it is not to be used for several days.
- To disconnect the AC power cord, pull it out by the plug. Never pull the cord itself.

On installation

- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Keep the unit away from a loudspeaker or motor, as the picture may be affected.

On cleaning

Clean the unit with a slightly dampened soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzine as they might damage the finish of the cabinet.
As a safety precaution, unplug the unit before cleaning it.

On repacking

Retain the original carton and packing materials for safe transport of this unit in the future.

If you have any questions about this unit, contact your authorized Sony dealer.

Table of Contents

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Features

English

Beam current feedback circuit

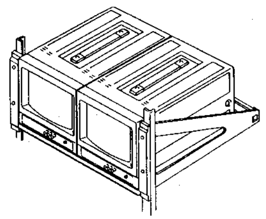
The built-in beam current feedback circuit assures stable white balance.

Automatic release of BNC-type connector termination

The BNC-type input connector is terminated at 75 ohms inside when the BNC-type output connector is open. When a cable is connected to the BNC-type output connector, the 75-ohm termination is automatically released, and the signal input through the IN connector is output from the corresponding OUT connector.

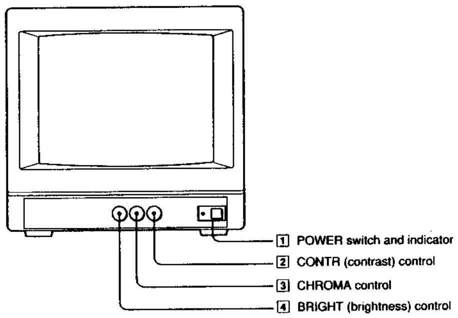
EIA standard 19-inch rack mounting

By using an MB-507 mounting bracket (not supplied), the monitor can be mounted in an EIA standard 19-inch rack. For details on mounting, see the instruction manual of the MB-507.



Location and Function of Parts and Controls

Front


1 POWER switch and indicator
2 CONTR (contrast) control
3 CHROMA control
4 BRIGHT (brightness) control

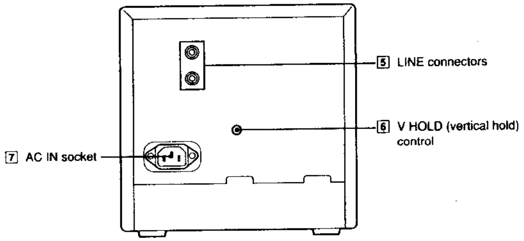
1 **POWER switch and indicator**
Depress to turn the monitor on. The indicator will light up in green.

2 **CONTR (contrast) control**
Turn clockwise to make the contrast stronger and counterclockwise to make it weaker.

3 **CHROMA control**
Turn clockwise to make the color intensity stronger and counterclockwise to make it weaker.

4 **BRIGHT (brightness) control**
Turn clockwise for more brightness and counterclockwise for less.

Rear


5 LINE connectors
6 V HOLD (vertical hold) control
7 AC IN socket

5 **LINE connectors**

VIDEO IN (BNC): Connect to the video output of a video camera, VCR or other video equipment.
VIDEO OUT (BNC): Loop-through output of the VIDEO IN connector. Connect to the video input of a VCR or another monitor.

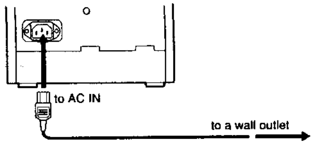
6 **V HOLD (vertical hold) control**
Turn to stabilize the picture if it rolls vertically.

7 **AC IN socket**
Connect the supplied AC power cord to this socket and to a wall outlet.

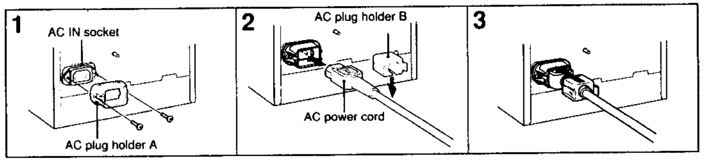
Power Sources

House Current

Connect the supplied AC power cord to the AC IN socket and to a wall outlet.



To connect an AC power cord securely with AC plug holders



1 **Remove the AC IN socket screws and then use them to attach AC plug holder A (supplied) to the AC IN socket.**

2 **Plug the power cord to the AC IN socket. Then, attach AC plug holder B (supplied) on top of the AC power cord.**

3 **Slide AC plug holder B over the cord until it connects with AC plug holder A.**

To remove the AC power cord
Pull out AC plug holder B by squeezing the left and right sides.

Specifications

English

Video signal

Color system	PAL
Resolution	250 TV lines
Frequency response	6.0 MHz (–3.0 dB)
Synchronization	AFC time constant 1.0 msec.

Picture performance

Normal scan	6% over scan of CRT effective screen area
H. linearity	Less than 7.0% (typical)
V. linearity	Less than 7.0% (typical)
Convergence	Central area: 0.43 mm (typical) Peripheral area: 0.53 mm (typical)
Raster size stability	H: 1.0%, V: 1.5%
High voltage regulation	3.0%
Color temperature	D65

Input and Output

Input	VIDEO IN: BNC connector, 1Vp-p ± 6 dB, sync negative
Loop-through output	VIDEO OUT: BNC connector, 75 ohms terminated

General

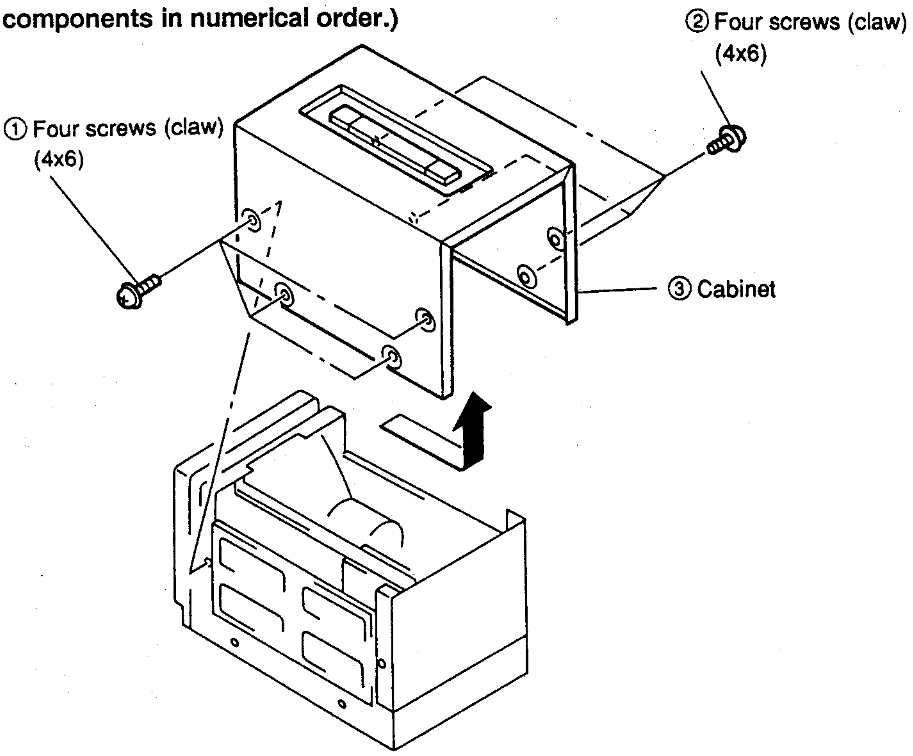
Power consumption	39 W
Power requirements	100 – 240 V AC, 50/60 Hz
Operating temperature range	0 – 35°C
Storage temperature range	–10 – +40°C
Humidity	0 – 90%
Dimensions	Approx. 217 × 217 × 352.5 mm (w/h/d) (8⁵/₈ × 8⁵/₈ × 14 inches) not incl. projecting parts and controls
Mass	Approx. 7.8 kg (17 lb 3 oz)
Accessory supplied	AC power cord (1) AC plug holder (1 set)

Design and specifications are subject to change without notice.

MEMO

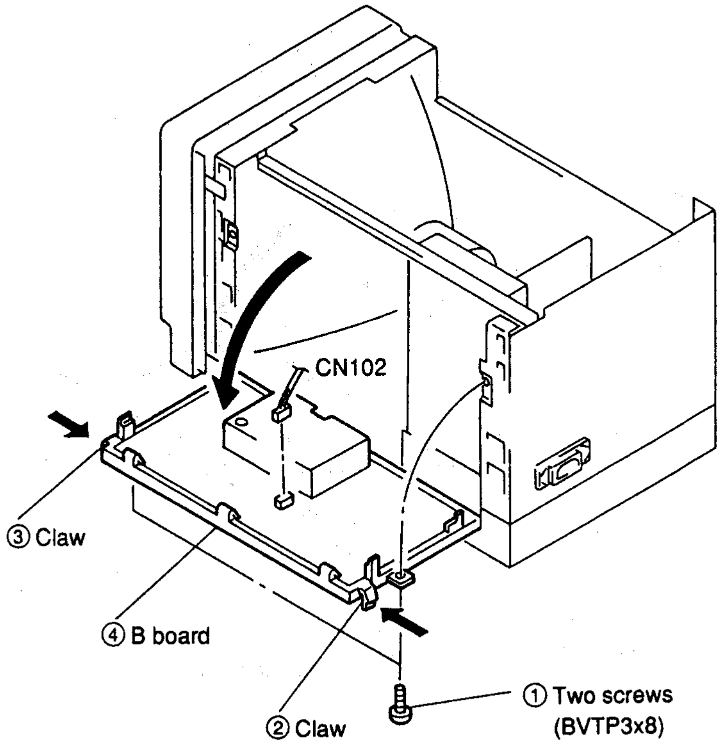
SECTION 2
DISASSEMBLY

2-1. CABINET REMOVAL
(Remove the components in numerical order.)



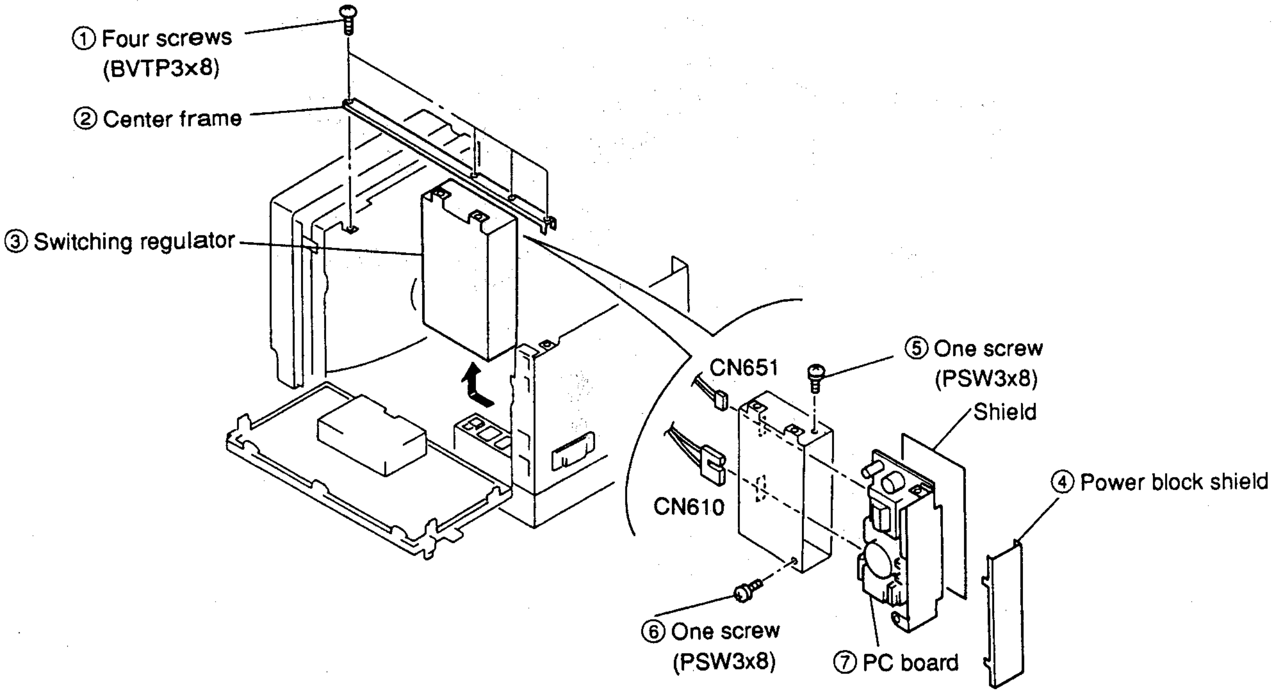
① Four screws (claw)
(4x6)
② Four screws (claw)
(4x6)
③ Cabinet

2-2. B BOARD REMOVAL
(Remove the components in numerical order.)

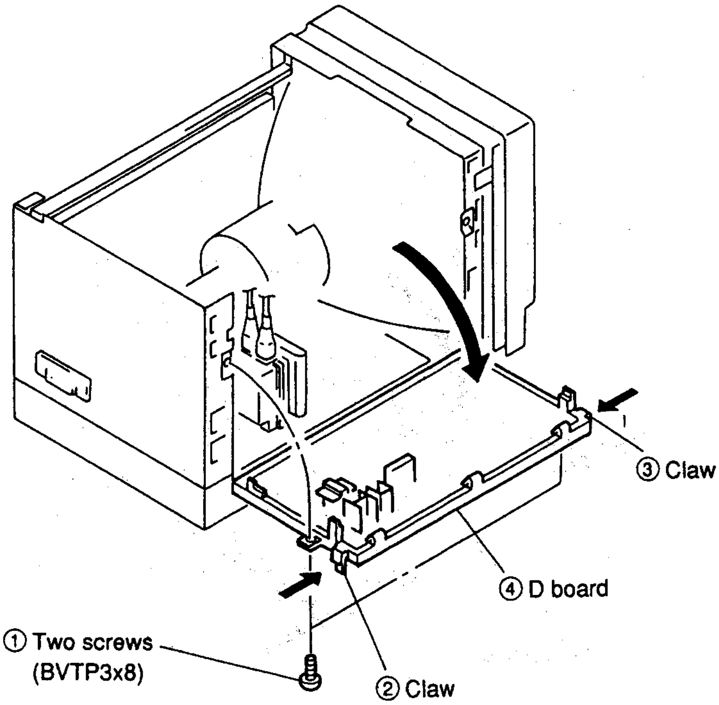


CN102
③ Claw
④ B board
② Claw
① Two screws
(BVTP3x8)

2-3. SWITCHING REGULATOR REMOVAL
(Remove the components in numerical order.)

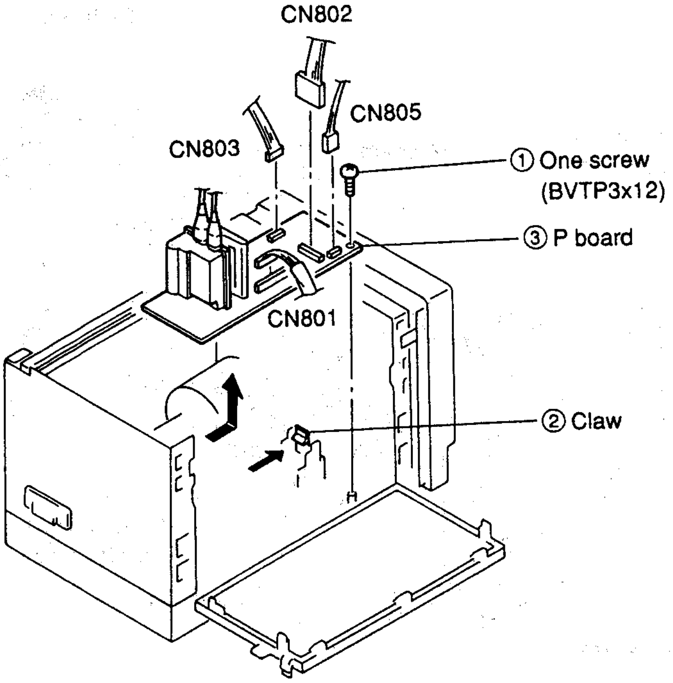

① Four screws
(BVTP3x8)
② Center frame
③ Switching regulator
CN651
⑤ One screw
(PSW3x8)
Shield
④ Power block shield
CN610
⑥ One screw
(PSW3x8)
⑦ PC board

2-4. D BOARD REMOVAL
(Remove the components in numerical order.)


③ Claw
④ D board
① Two screws
(BVTP3x8)
② Claw

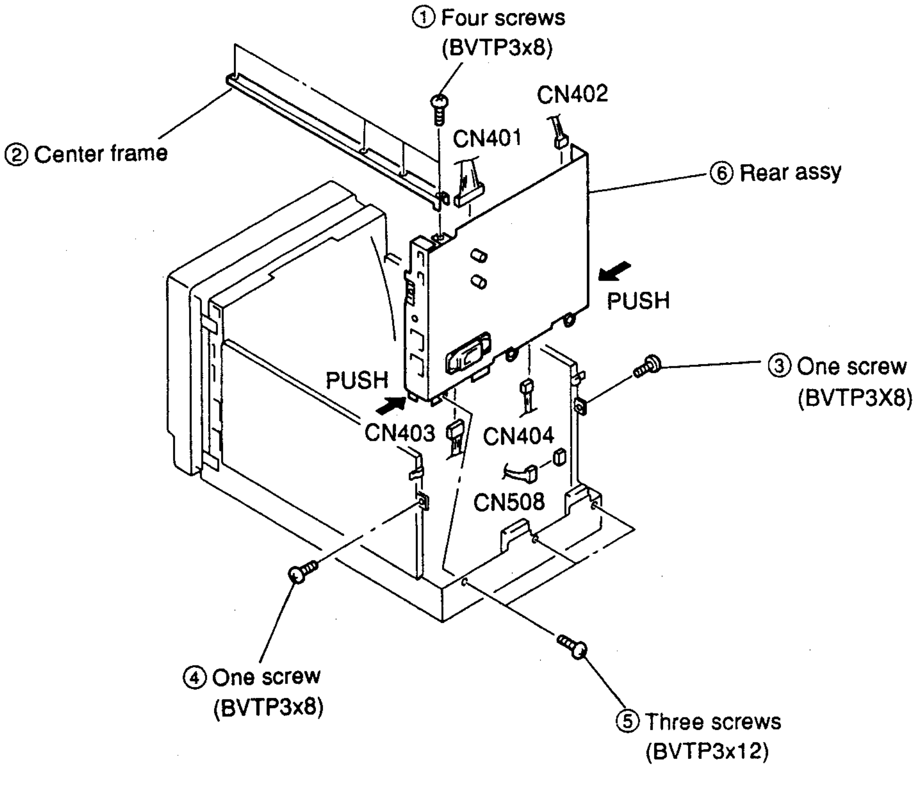
2-5. P BOARD REMOVAL

(Remove the components in numerical order.)


CN802
CN805
CN803
① One screw
(BVTP3x12)
③ P board
CN801
② Claw

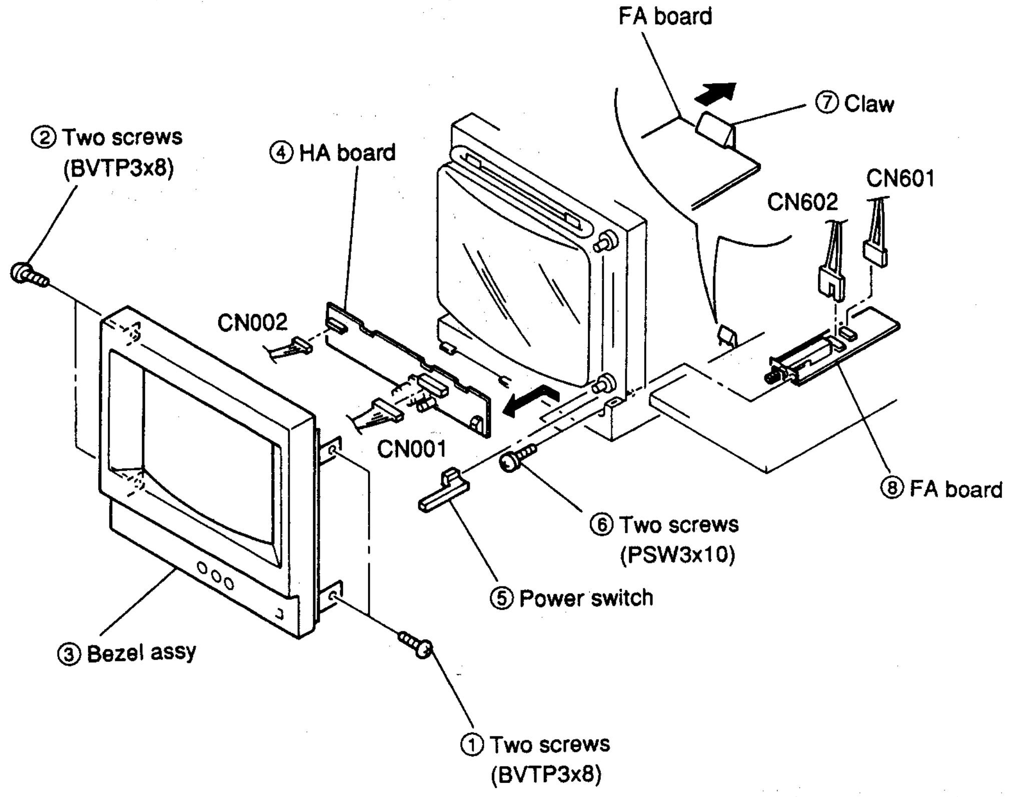
2-6. REAR ASSY REMOVAL

(Remove the components in numerical order.)


① Four screws
(BVTP3x8)
CN402
CN401
② Center frame
⑥ Rear assy
PUSH
③ One screw
(BVTP3X8)
PUSH
CN403
CN404
CN508
④ One screw
(BVTP3x8)
⑤ Three screws
(BVTP3x12)

2-7. HA AND FA BOARDS REMOVAL

(Remove the components in numerical order.)


FA board
⑦ Claw
② Two screws
(BVTP3x8)
④ HA board
CN601
CN602
CN002
CN001
⑧ FA board
⑥ Two screws
(PSW3x10)
⑤ Power switch
③ Bezel assy
① Two screws
(BVTP3x8)

2-8. PICTURE TUBE REMOVAL

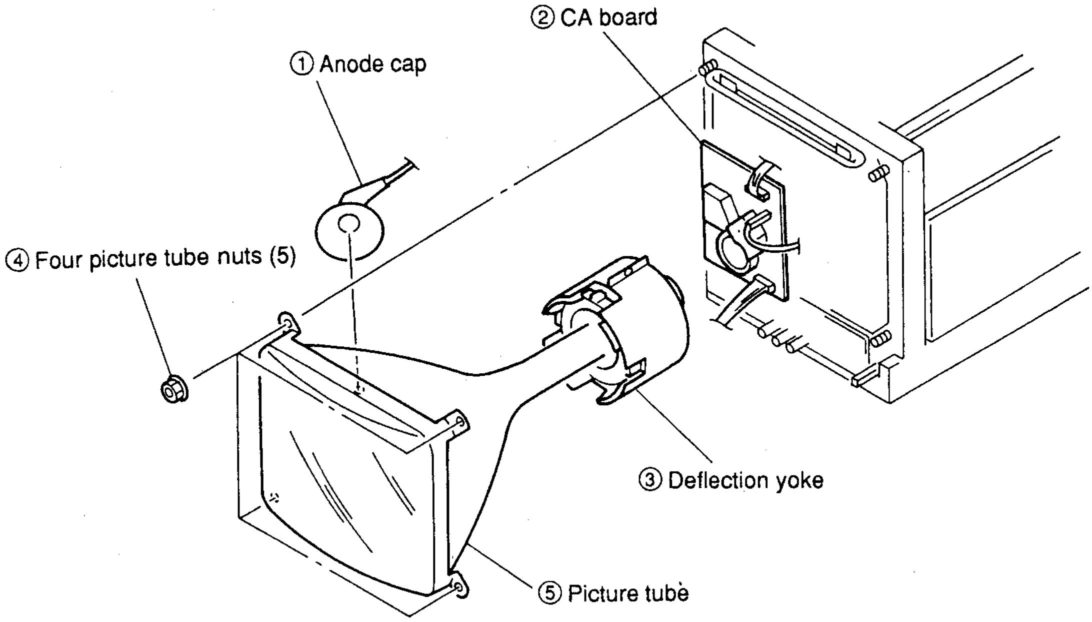
Note : Caution for ANODE CAP installation.
When you replace PICTURE TUBE or FBT, remove RTV on ANODE CAP so that PICTURE TUBE and FBT can be separated. Please adhere picture tube and anode cap in accordance with the following procedure.

ADHERING PROCEDURE OF ANODE CAP.

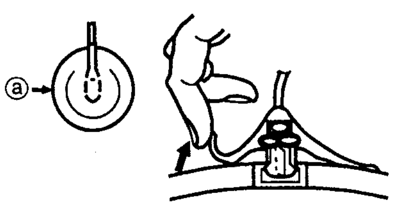
1. Clean PICTURE TUBE ANODE CAP with ethnaol to remove original RTV.
2. Dry clean face with air.
3. Use KE-490RTV (RTV silicone adhesive, SHIN-ETSU CHEMICAL).

Part. No.	Description
7-322-065-19	Silicone (RTV) KE-490W

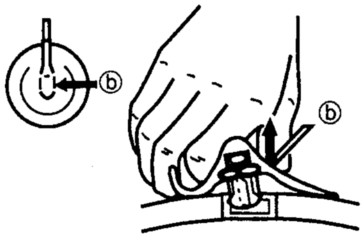
4. Install ANODE CAP.
5. Adeguately apply RTV to the entire picture tube anode area, piace the anode cap onto the picture tube and push it down securety so that no air pockets remain beneath the cap.
6. Dry more than 12 hours at room temperature.



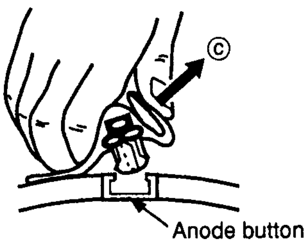
- **REMOVAL OF ANODE-CAP**
- **REMOVING PROCEDURES**



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



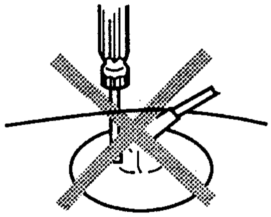
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.

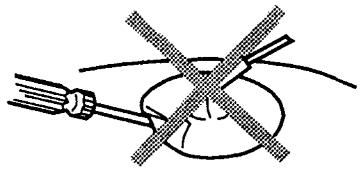


③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

- **HOW TO HANDLE AN ANODE-CAP**

① Don't hurt the surface of anode-caps with sharp shaped material!
② Don't press the rubber hardly not to hurt inside of anode-caps!
A metal fitting called as shatter-hook terminal is built in the rubber.
③ Don't turn the foot of rubber over hardly!





MEMO

SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

The control and switch below should be set as follows unless otherwise noted:

CONTRAST control 80%
BRIGHTNESS control 50%

Perform the adjustments in order as follows:

3-1. Beam Landing
3-2. Convergence
3-3. Focus
3-4. White Balance

Note: Test equipment Required.

1. Color Bar/Pattern Generator
2. Degausser
3. Color Analyzer (Minolta)
4. Luminance Level Meter

3-1. BEAM LANDING

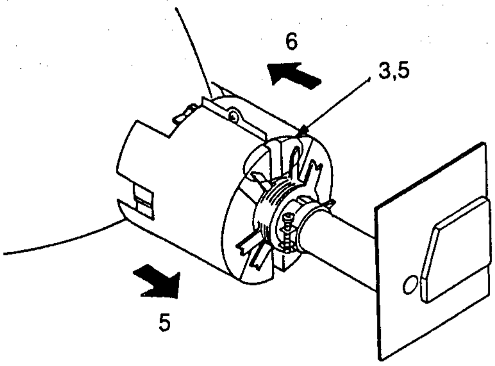
Precaution

1. Set the side of the unit with the PICTURE TUBE so that it faces east or west in order to reduce the influence of external magnetic force.
2. Turn the power switch for the unit ON and erase the magnetic force using a degausser.

(1) Beam Landing

1. Receive an entirely white signal with the pattern generator.
   CONTRAST .... MAX.
   BRIGHTNESS .... set easy to observe
2. Adjust the white balance, G2 voltage and convergence roughly.
3. Loosen the deflection yoke mounting screw, and set the purity control to the center as shown in Fig.3-1.
4. Switch over the pattern generator to green.
5. Move the deflection yoke backward, and adjust with the purity control so that green is in the center and blue and red are at the sides, evenly. (Fig.3-2)
6. Move the deflection yoke forward, and adjust so that the entire screen becomes green. Repeat 5 to 7 as to red and blue.
7. When landing at the corners is not right, correct by using the magnet. (Fig.3-3)
8. When the position of the deflection yoke is determined, tighten it with a deflection yoke mounting screw.

CAUTION: When correction magnet is used, be sure to degauss the unit.



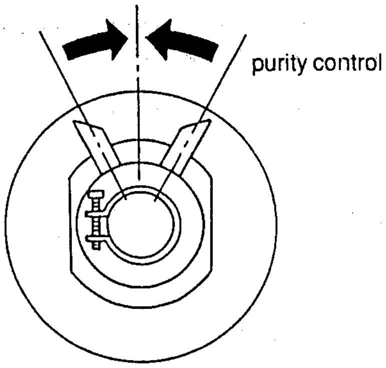

purity control

Fig.3-1

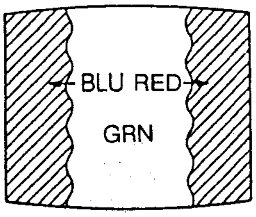


Fig.3-2

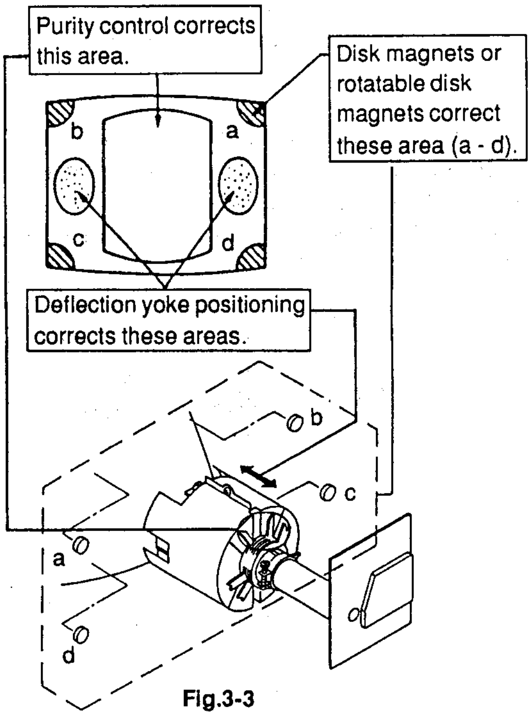

Purity control corrects this area.
Disk magnets or rotatable disk magnets correct these area (a - d).
b
a
c
d
Deflection yoke positioning corrects these areas.
b
c
a
d

Fig.3-3

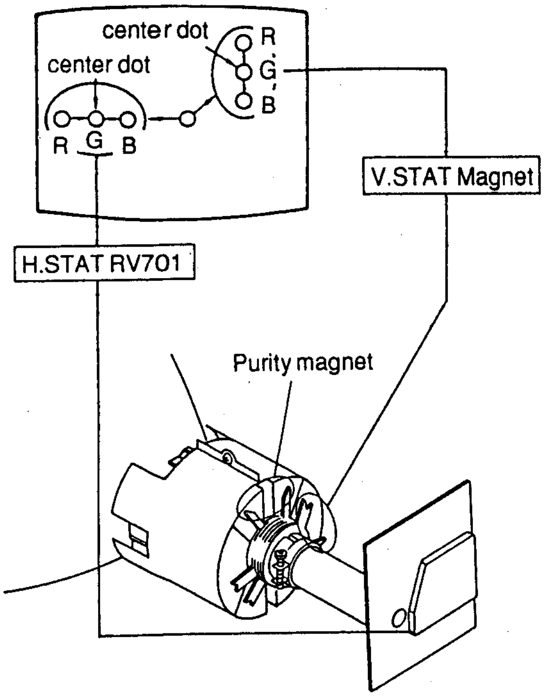
3-2. CONVERGENCE

(1) Horizontal and vertical Static Convergence Adjustment on the Center of Screen.

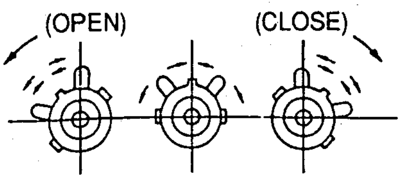
- Before starting, perform V. SIZE, V. CENT, H.SIZE, H.CENT and Screen Distortion Adjustment rightly.

(Static Convergence Adjustment)

1. Receive a dot signal, setting BRIGHTNESS minimum and set CONTRAST to normal.
2. Adjust H.STAT VR to coincide red, green and blue dots on the center of screen. (Horizontal movement)
3. Adjust V.STAT magnet to coincide red, green and blue dots on the center of screen. (Vertical movement)

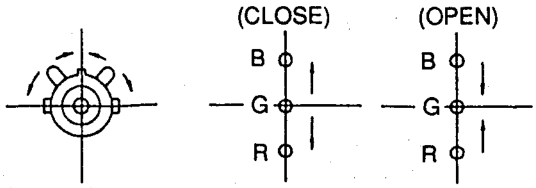

center dot
center dot
R
G
B
R G B
V.STAT Magnet
H.STAT RV701
Purity magnet

* If the red, green and blue dots do not coincide on the center of screen with H.STAT VR, perform adjustment using V.STAT at the same time while tracking.
(Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.)

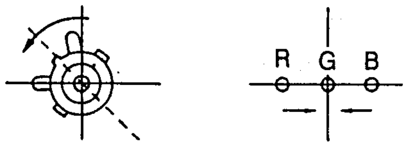


4. When the V.STAT magnet is moved in the direction of arrow A and b, red, green and blue dots move as shown below.

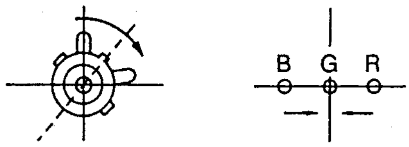
① When moving the V.STAT Magnet open or close.


(CLOSE)
(OPEN)
B
G
R
B
G
R

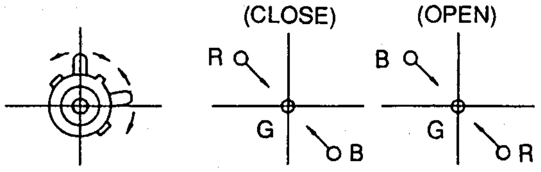
② When moving the V.STAT magnet counterclockwise.



③ When moving the V.STAT magnet clockwise.



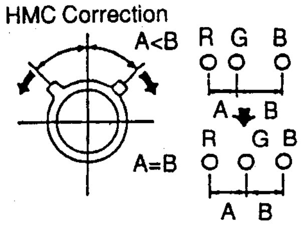
④ When tilt the V.STAT magnet and open or close.

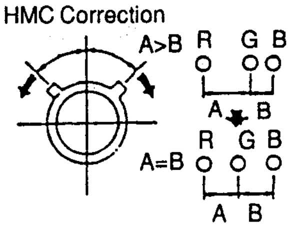

(CLOSE)
(OPEN)
R
G
B
B
G
R

* If the red and green dots do not coincide with blue dot, adjustment with BMC (6-poles) magnet.

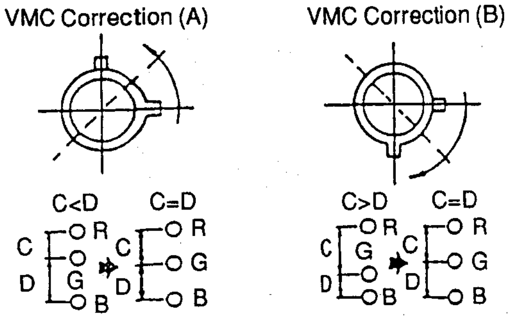
5. HMC and VMC correction for BMC (6-Poles) magnet.

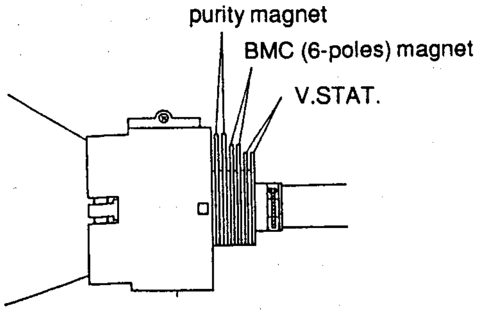
① HMC (Horizontal Misconvergence) correction and motion of the Electron Beam with the BMC (6-poles) magnet.


HMC Correction
A<B
R G B
A B
R G B
A=B
A B


HMC Correction
A>B
R G B
A B
R G B
A=B
A B

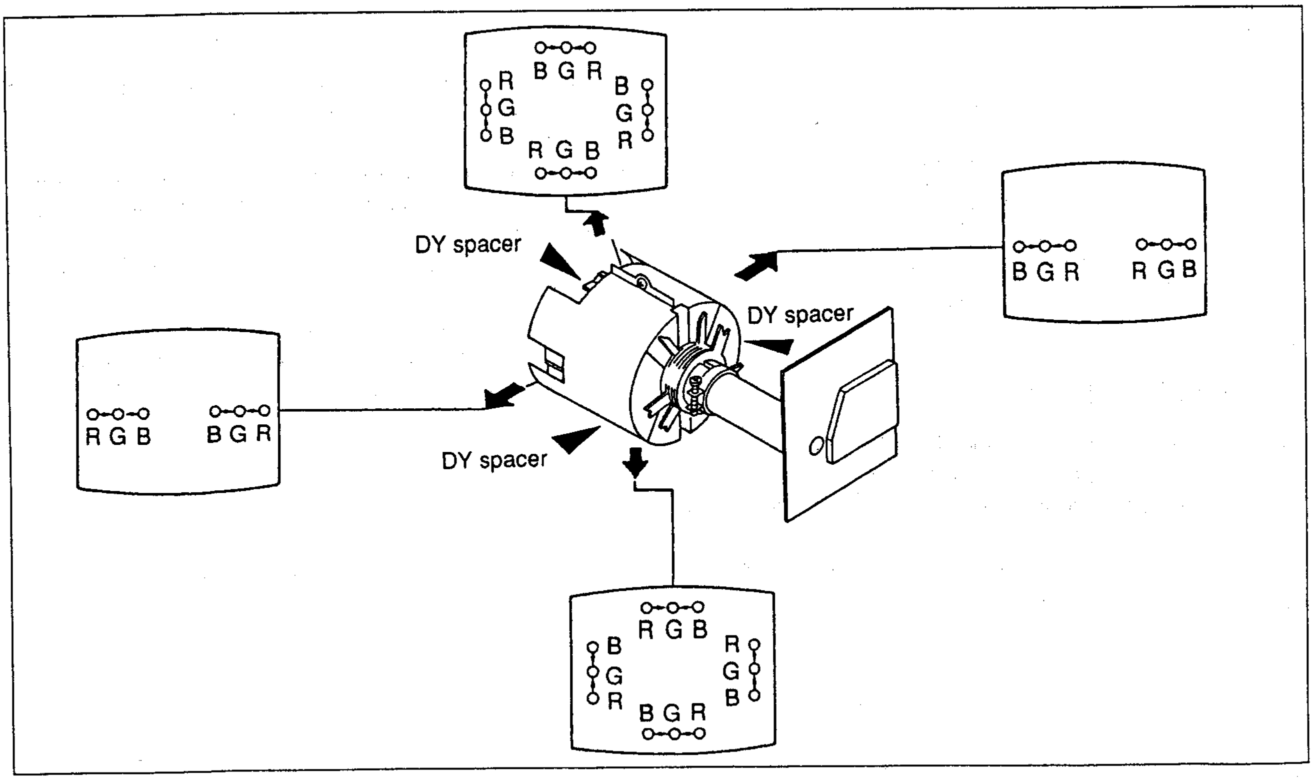
② VMC (Vertical Misconvergence) correction and motion of the Electron Beam with the BMC (6-poles) magnet.


VMC Correction (A)
VMC Correction (B)
C<D
C=D
C>D
C=D
C
D
R
G
B

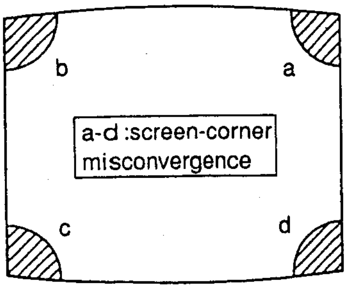

purity magnet
BMC (6-poles) magnet
V.STAT.

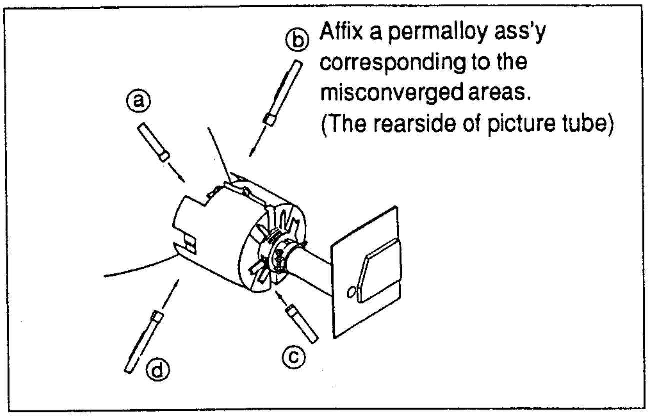
(2) Horizontal and Vertical Dynamic Convergence Adjustment at the Environs of the Screen (Dynamic Convergence Adjustment)

1. When there is misconvergence at the sides of screen, adjust for best convergence as follows by moving the deflection yoke.
2. Loosen deflection yoke screw. Remove deflection yoke spacers. Move the deflection yoke for best convergence. Tighten the deflection yoke screw. Install three deflection yoke spacers.


DY spacer
DY spacer
DY spacer
B G R
R G B
R G B
B G R

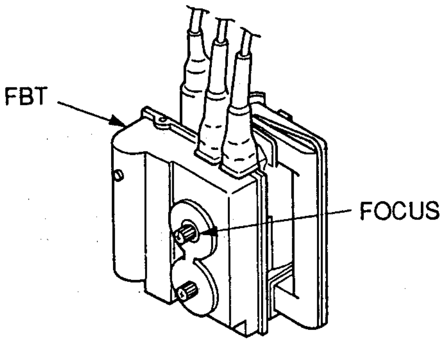
Screen-corner Convergence


b
a
a-d :screen-corner misconvergence
c
d


ⓑ Affix a permalloy ass'y corresponding to the misconverged areas. (The rearside of picture tube)
ⓐ
ⓓ
ⓒ

3-3. FOCUS

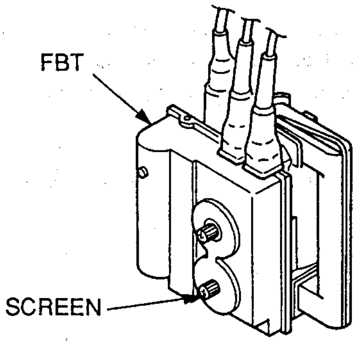
1. Receive the broadcast.
2. CONTRAST → Normal
3. Adjust FOCUS control so that the focus on the center of screen becomes to the best.



3-4. WHITE BALANCE

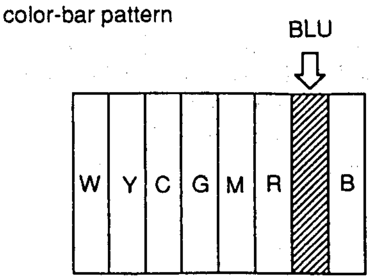
[Screen (G2) Voltage Adjustment]

1. Receive a dot signal with the pattern generator.
2. Adjust R. G. B cut-off controls so that respective cathode voltage against ground becomes 103V DC.
3. Observing the screen, adjust SCREEN control so that the background of the dot signal is bright dimly.



[White Balance]

1. Receive a color-bar pattern signal with the pattern generator. (Make black and white screen by chroma switch off.)
2.
   - BRIGHTNESS 50%
   - CONTRAST .... Minimum
   - CHROMA 50%
   - DRIVE control .... Mechanical center
   - BKG control .... Mechanical center
3. Adjust RV118 (SUB BRT) on B board so that the blue stripe portion on the color-bar pattern signal is bright dimly.


color-bar pattern
BLU
W
Y
C
G
M
R
B

4. Receive an entirely white signal from the pattern generator.
5. CONTRAST .... 70% (90 degree clockwise from mechanical center.)
6. Using the luminance level meter, adjust the luminance level of the pattern generator becomes 3 Nits. (The condition the screen is bright dimly.)
7. Adjust white balance at cut-off using RV119 (G-C/O) and RV121 (B-C/0).
8. Change the all-white signal luminance level to 100 IREs.
9. Adjust white balance at high-light using RV120 (G-GAIN) and RV121 (B-GAIN).

SECTION 4
SAFETY RELATED ADJUSTMENTS

4-1. SAFETY RELATED ADJUSTMENTS

B+ ADJUSTMENT AND B+ MAX CONFIRMATION (⊠ RV651)

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).

◪ on G board : (Power supply block)
IC601, IC651, PH601, C654, R653, R655, R656, R657, RV651.

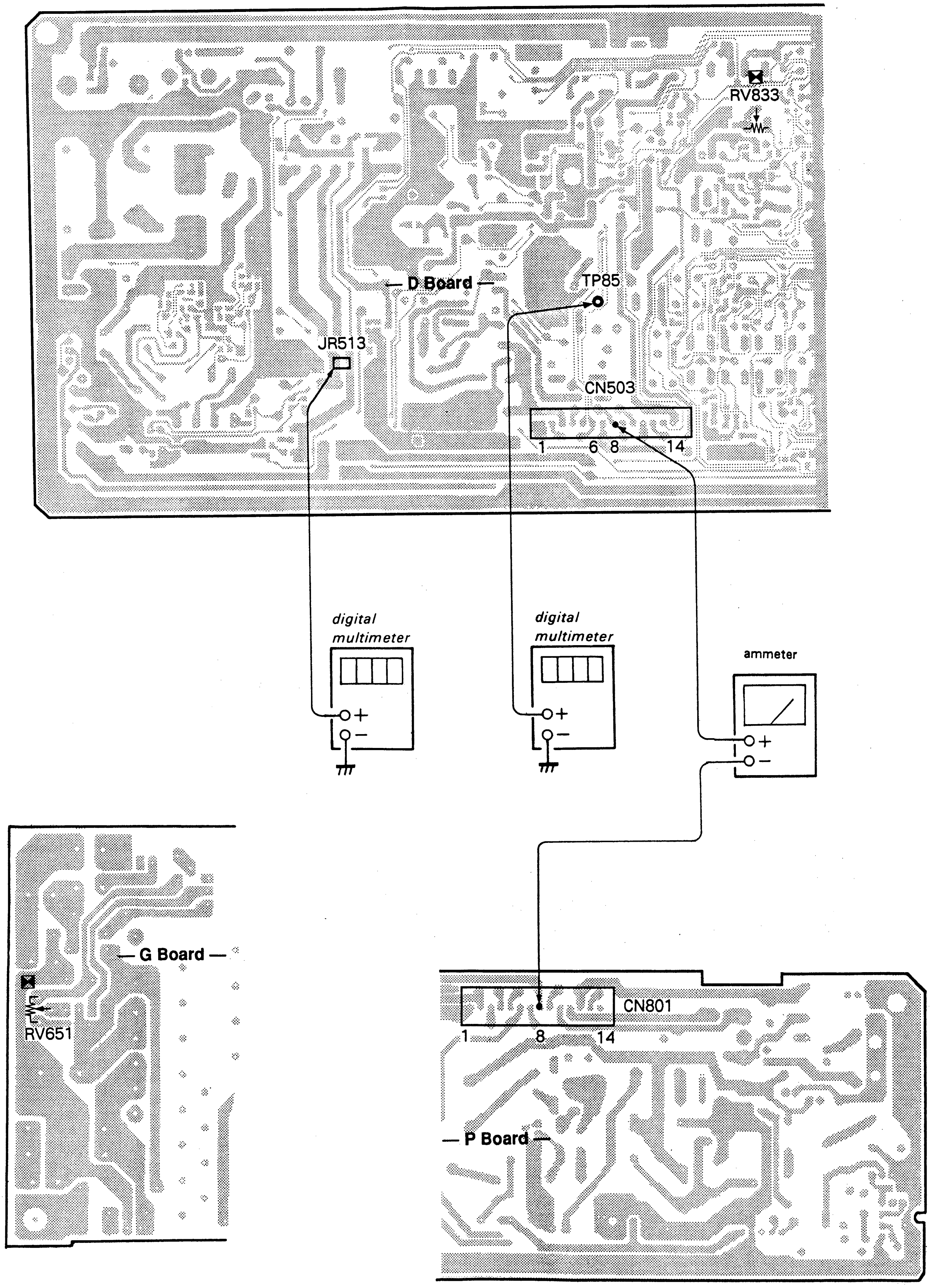
1. Input the AC power supply voltage $240V^{+1}_{-0}$V.
2. Input the monoscope signal.
3. Set as follows.
   - CONTRAST 80%
   - BRIGHTNESS 50%
4. Connect the digital multimeter to JR513 on the D board.
5. Adjust RV651 on the G board so that the B+ voltage becomes 40.0 ± 0.1V.
6. After adjusting RV651, fix it with an epoxy.
7. Input the AC power supply voltage $250V^{+1}_{-0}$ V.
8. Input the dot signal.
9. Set as follows.
   - CONTRAST .... Minimum
   - BRIGHTNESS .... Minimum
10. Check that the B+ voltage is below 41.9V.
    If it is above this value, repeat from step (1).

HOLD-DOWN CIRCUIT CONFIRMATION (⊠ RV833) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).

◪ on D board:
IC502, Q833, Q834, Q835, Q836, D835, D836, C519, C843, C844, C845, C846, C847, C848, RV833, R523, R850, R851, R852, R853, R854, R855, R856, R857, R858, R859, R861, R862, R863, NL801.
◪ on P board:NL801,T802 (FBT),C814

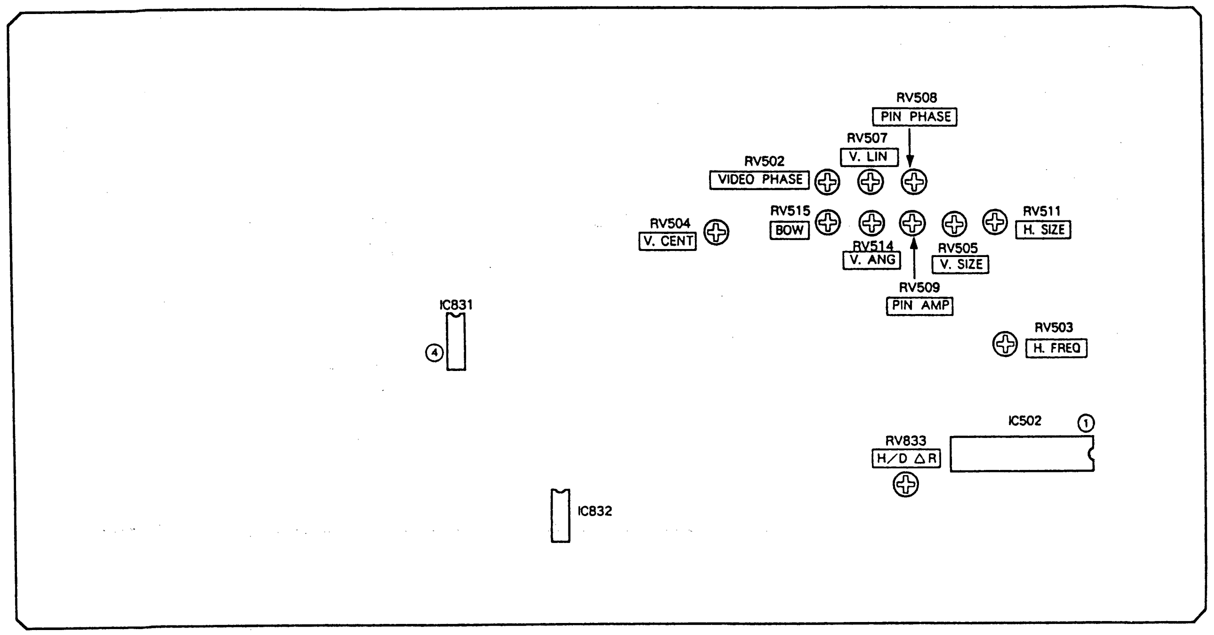
1. Receive an entire white signal.
2. - CONTRAST .... Maximum
   - BRIGHTNESS .... Maximum
3. Connect a digital multimeter to the TP85 (CN503 pin-⑥).
4. Confirm the voltage is 14.1 ± 3.0V DC.
5. Receive a dot signal.
6. Connect an ammeter between D board CN503 pin-⑧ and P board CN801 pin-⑧.
7. Adjust BRIGHTNESS and CONTRAST so that the current is IABL = 160 ± 30 µA.
8. Apply an external DC voltage gradually to TP85. When the voltage becomes 18.5V ± 0.1V DC, confirm the HOLD-DOWN circuit operates immediately and raster disappears.
9. When external DC voltage at TP85 becomes 17.5V ± 0.1V DC, confirm the HOLD-DOWN circuit doesn't operate.
10. Receive an entire white signal.
11. Adjust with BRIGHTNESS and CONTRAST controls so that the current is IABL = 520 ± 30 µA.
12. Apply DC voltage of 17.8V ± 0.1V to TP85. Confirm the HOLD-DOWN circuit operates immediately and raster disappears.
13. With the same set-up as steps 10 and 11, supply 16.8V ± 0.1V DC to TP85. Confirm that the HOLD-DOWN circuit doesn't operate.
14. When above specifications are not satisfied, readjust RV833. After adjusting, fasten RV833 in place with epoxy.



SECTION 5
CIRCUIT ADJUSTMENTS

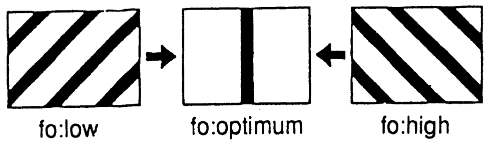
5-1. D BOARD ADJUSTMENTS

—D BOARD (COMPONENT SIDE)—


RV508
PIN PHASE
RV507
V. LIN
RV502
VIDEO PHASE
RV515
BOW
RV511
H. SIZE
RV504
V. CENT
RV514
V. ANG
RV505
V. SIZE
RV509
PIN AMP
IC831
④
RV503
H. FREQ
IC502
①
RV833
H/D ΔR
IC832

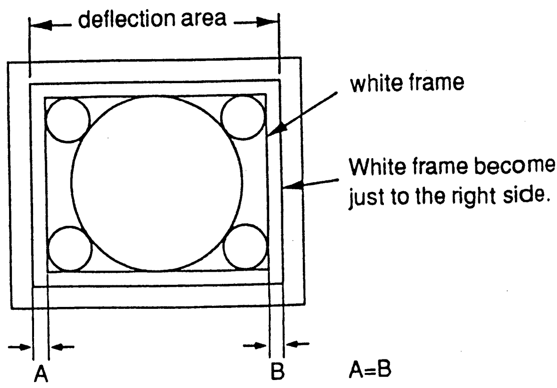
HORIZONTAL OSCILLATION FREQUENCY ADJUSTMENT (RV503)

1. Receive a monoscope signal.
2. Connect pin-① of IC502 to ground with 100μF/16V electrolytic capacitor.
3. Adjust RV503 (H.FREQ) so that the screen streaming to stops.


fo:low
fo:optimum
fo:high

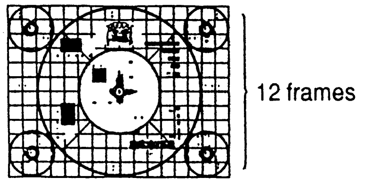
SCREEN PHASE ADJUSTMENTS (RV502, RV511)

1. Receive a monoscope signal.
2. • CONTRAST .... Minimum
   • BRIGHTNESS .... Maximum.
3. Adjust RV511 (H. SIZE) so that the white frame of monoscope signal becomes visible.
4. Adjust RV502 (VIDEO PHASE) so that the monoscope should have equal width.

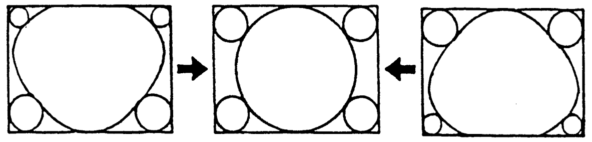

deflection area
white frame
White frame becomes just to the right side.
A
B
A=B

VERTICAL DEFLECTION PART ADJUSTMENTS (RV504, RV505, RV507)

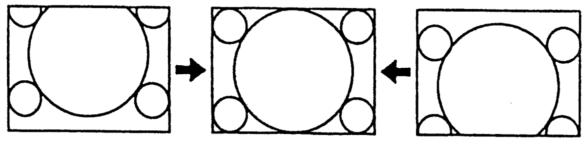
1. Receive a monoscope signal.
2. • CONTRAST 70%
   • BRIGHTNESS 50%
3. Adjust RV505 (V. SIZE) so that the vertical size of monoscope signal becomes 12 frames.



4. Adjust RV507 (V.LIN) the vertical linearity.



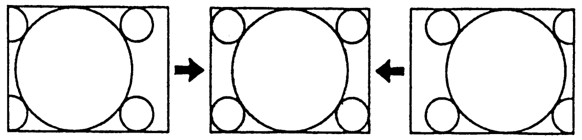
5. Adjust RV504 (V. CENT) the vertical position.



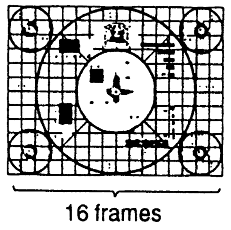
6. V. SIZE ADJUSTMENT (RV505)
(1) Adjust RV505 (V. SIZE) so that the vertical size of monoscope signal becomes 11.3 +0.2 frames.

HORIZONTAL DEFLECTION PART ADJUSTMENTS (RV508, RV509, RV511, RV514, RV515, RV801/P board)

1. Receive a monoscope signal.
2. • CONTRAST 70%
   • BRIGHTNESS 50%
3. H. CENT Adjustment (RV801 on P board)
(1) Adjust RV801 on P board (H. CENT) the horizontal position.

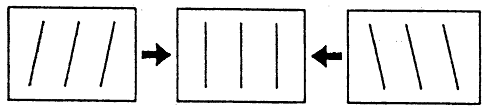


4. H. SIZE Adjustment (RV511)
(1) Adjust RV511 (H. SIZE) the horizontal size of 16 frames of monoscope signal.

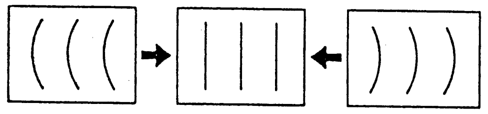


5. PIN AMP. PIN PHASE, V. ANG, BOW ADJUSTMENTS (RV508 RV509, RV514, RV515)
Adjust RV514 (V. ANG) and RV515 (BOW) to correct vertical angular distortion and bow distortion. Adjust RV509 (PIN AMP) and RV508 (PIN PHASE) so that vertical lines become straight.

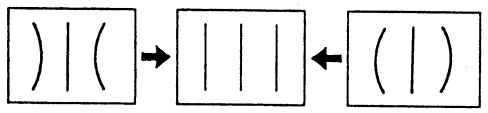
- V. ANG (RV514)



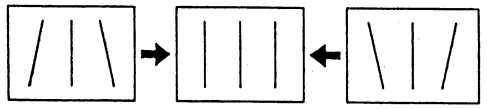
- BOW (RV515)



- PIN AMP (RV509)



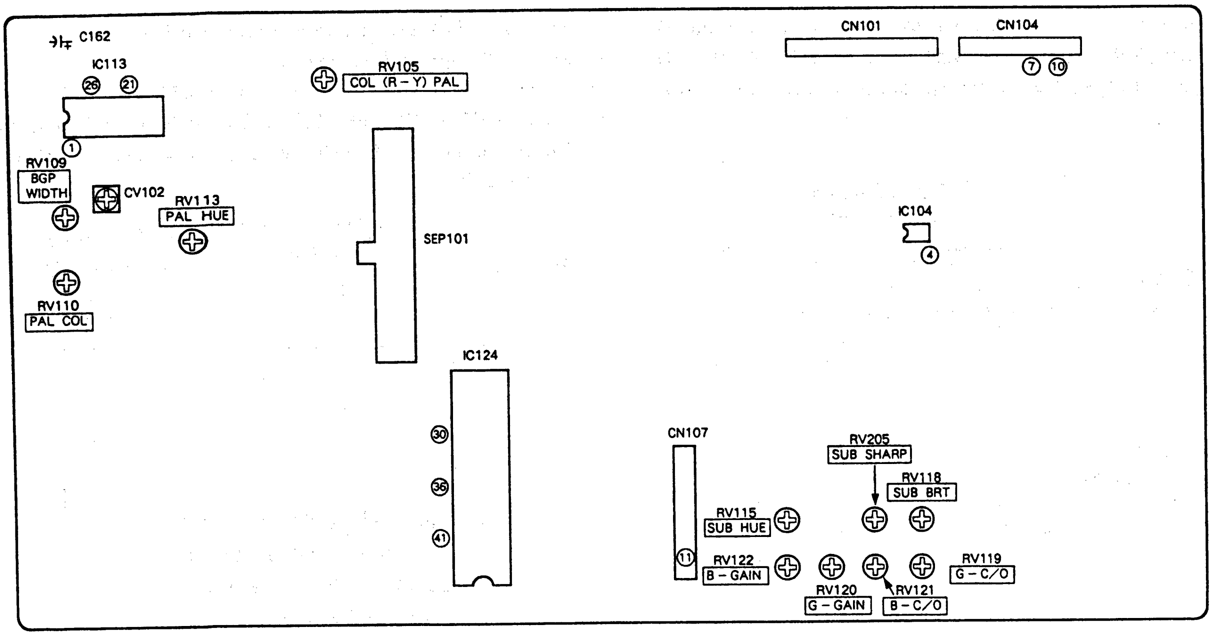
- PIN PHASE (RV508)



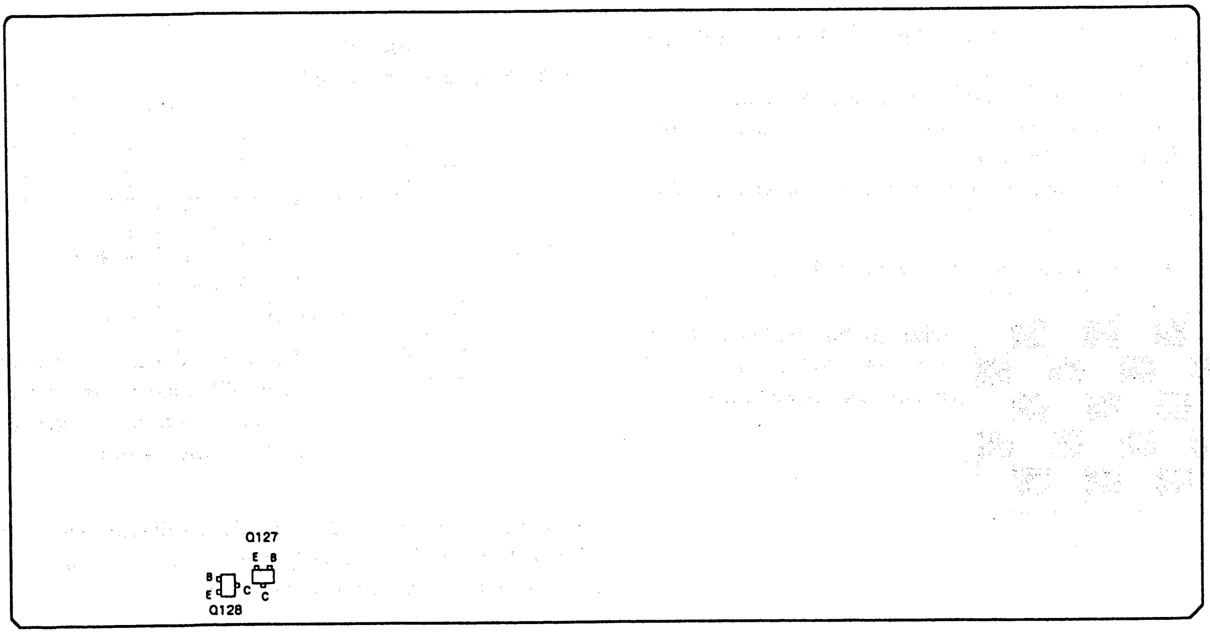
6. H. SIZE ADJUSTMENT (RV511)
(1) Adjust RV511 (H. SIZE) so that the horizontal size becomes 15.4 ± 0.2 frames.

5-2. B BOARD ADJUSTMENT

-B BOARD (COMPONENT SIDE)-

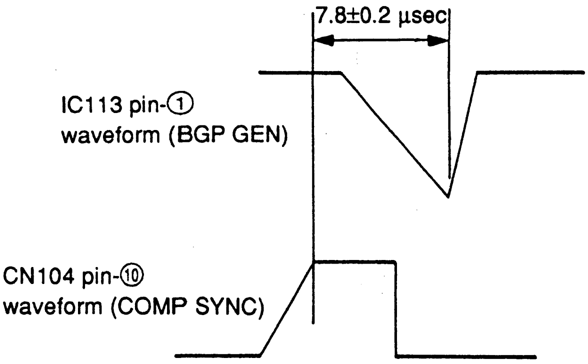

C162
IC113
㉖
㉑
①
RV105
COL (R-Y) PAL
CN101
CN104
⑦
⑩
RV109
BGP
WIDTH
CV102
RV113
PAL HUE
SEP101
IC104
④
RV110
PAL COL
IC124
㉚
㊱
㊶
CN107
⑪
RV205
SUB SHARP
RV118
SUB BRT
RV115
SUB HUE
RV122
B-GAIN
RV120
G-GAIN
RV121
B-C/O
RV119
G-C/O

-B BOARD (CONDUCTOR SIDE)-


Q127
E
B
C
B
E
C
Q128

BURST GATE PULSE WIDTH ADJUSTMENT (RV109)

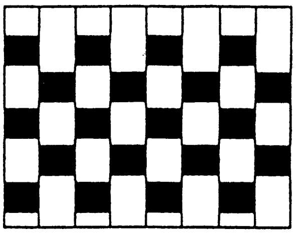
1. Receive color bar signal.
2. Connect dual trace oscilloscope to CN104 connector pin-⑩ (COMP-SYNC) and IC113 (M51279) pin-① (BGP-WIDTH). Adjust RV109 (BGP-WIDTH) to obtain the relationship as shown in the figure.



VXO ADJUSTMENT (CV102)

1. 4.43MHz VXO adjustment (CV102)
(1) Receive PAL color bar signal.
(2) Connect +5V power line to IC113 pin-㉖ (ID-FILT-REF) via a 4700Ω resistor.
(3) Ground C162 – negative side by connecting it to ground.
(4) Connect frequency counter to IC113 pin-㉑. Adjust CV102 (443FO) for 4433619±20Hz.
(This adjustment can be alternatively done by observing screen as below.)

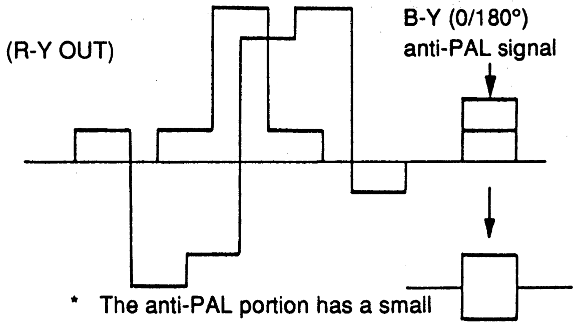
Adjust colour synchronization by CV102(443FO).



Adjust so that color stripes disappear and the hue change is stabilized extremely.

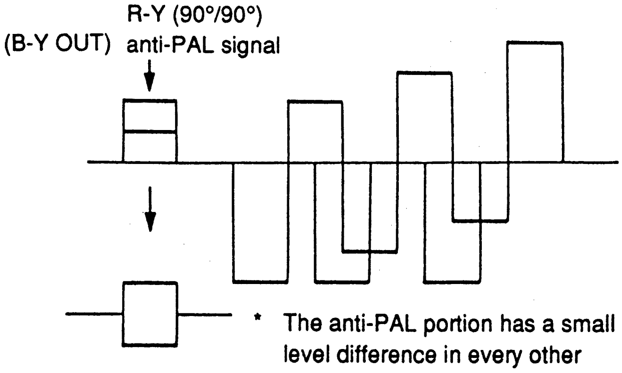
PAL COLOR DEMODULATION ADJUSTMENT (RV113,RV2/SEP101,RV110,RV115,RV105,RV205)

1. PAL PHASE Adjustment (RV113,RV2/SEP101)
(1) Receive the special PAL color-bar.
(2) Connect an oscilloscope to emitter of Q127 (R-Y OUT).
(3) Adjust RV113 (PAL-PHASE) so that B-Y (0/180°) anti-PAL portion (in the R-Y demodulated output) becomes "0" (flat) as following figure.



* The anti-PAL portion has a small level difference in every other horizontal period. So, adjust so that average becomes "0".

(4) Connect an oscilloscope to emitter of Q128 (B-Y OUT).
(5) Adjust RV2 inside SEP101 so that R-Y (90°/90°) anti-PAL portion (in B-Y demodulated output) becomes "0" (flat) as following figure.

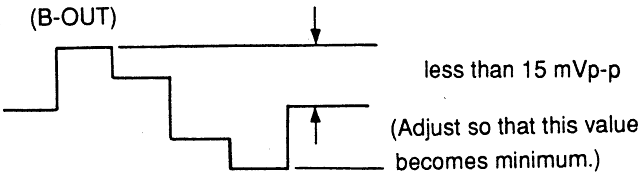


* The anti-PAL portion has a small level difference in every other horizontal period. So, adjust so that average becomes "0".

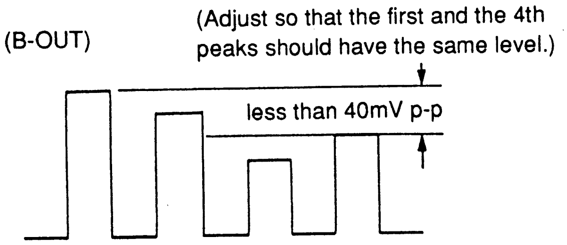
(For the adjustments of (3) and (5), it is also possible to set the color level to MAX with the chroma adjusting knob of the unit and erase the color of the anti-pal signal section.)

2. PAL COLOR ADJUSTMENT (RV110,RV115)

(1) Receive PAL color bar signal (75% color bar).
(2) Connect IC119 pin-④ to 12V, and the emitter of Q128 to GND.
(3) Connect an oscilloscope to IC124 pin-㉚ (B-OUT).
(4) Adjust RV115 (SUB HUE) so that the output waveform becomes 0 (below +20 mVp-p).

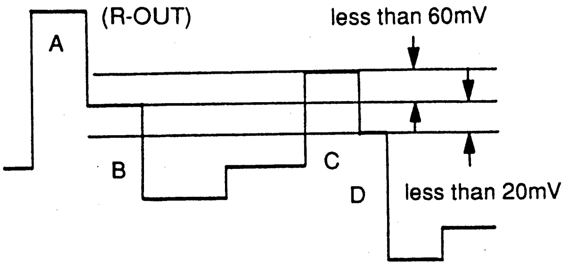

(B-OUT)
less than 15 mVp-p
(Adjust so that this value becomes minimum.)

(5) Adjust RV110 (PAL-COL) so that waveform peaks should have the same level (most flat).


(B-OUT)
(Adjust so that the first and the 4th peaks should have the same level.)
less than 40mV p-p

3. PAL-COLOR-(R-Y) ADJUSTMENT (RV105)

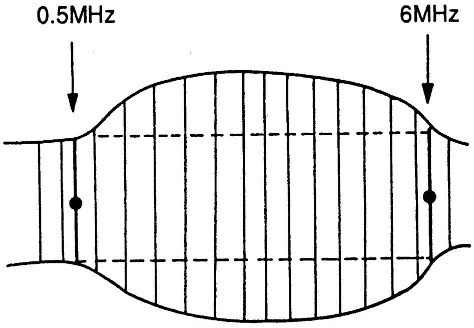
(1) Connect an oscilloscope to IC124 pin-㊶ (R-OUT).
(2) Adjust RV105 (PAL-COL-(R-Y)) so that waveform peaks should have the same level (most flat).


(R-OUT)
less than 60mV
A
B
C
D
less than 20mV

(Adjust for B=D. [less than 20mV] Also level difference between B and C should be less than 60mV.)

SUB-SHARP ADJUSTMENT (RV205)

(1) Receive a sweep signal (or multi-burst).
* • Bandwidth should be more than 10MHz (flat).
  • Composite sync should be included.
  • Turn burst off.
(2) Connect an oscilloscope to IC124 pin-㊱ (G-OUT).
(3) Adjust RV205 (SUB-SHARP) as shown.

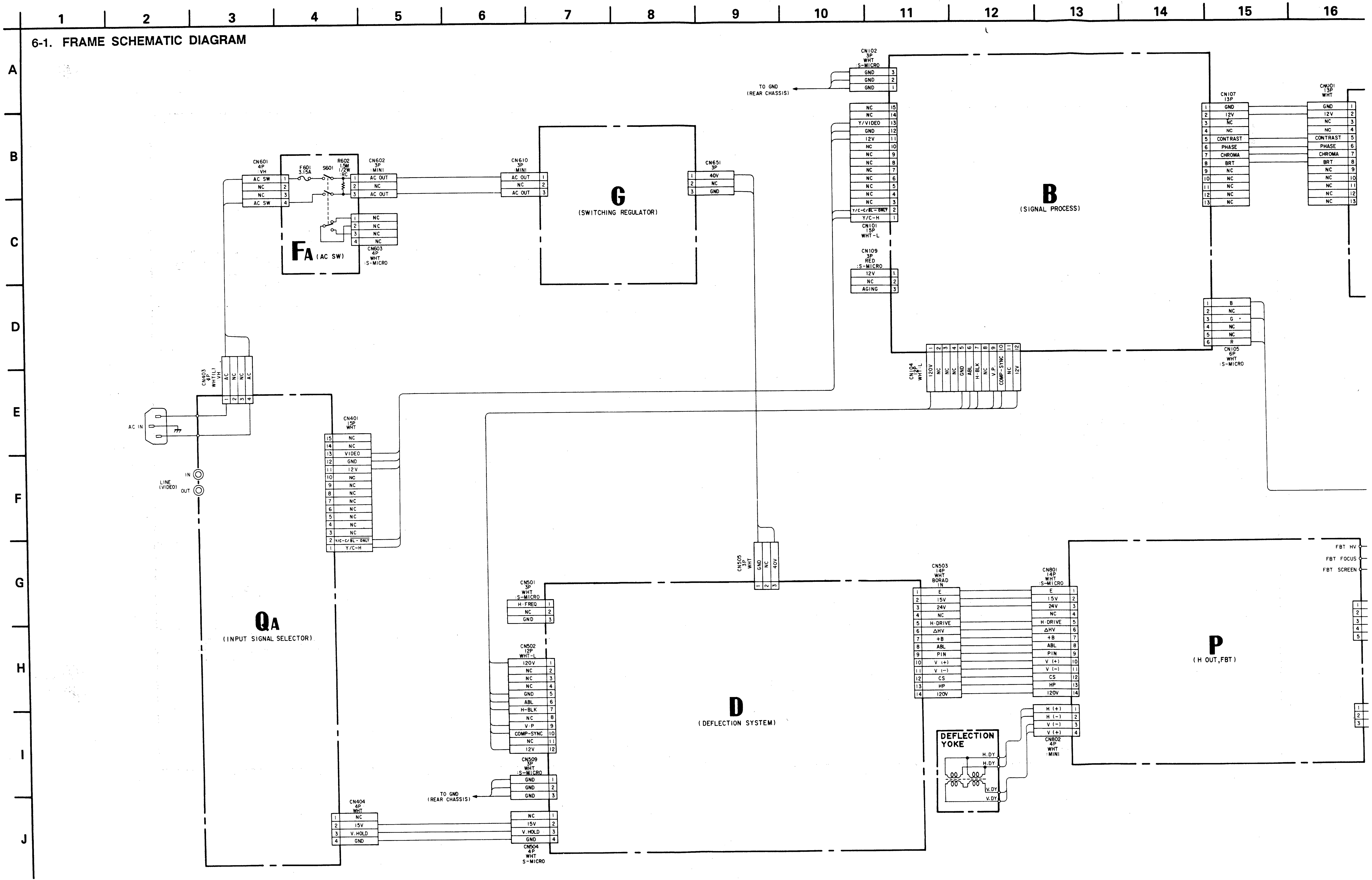


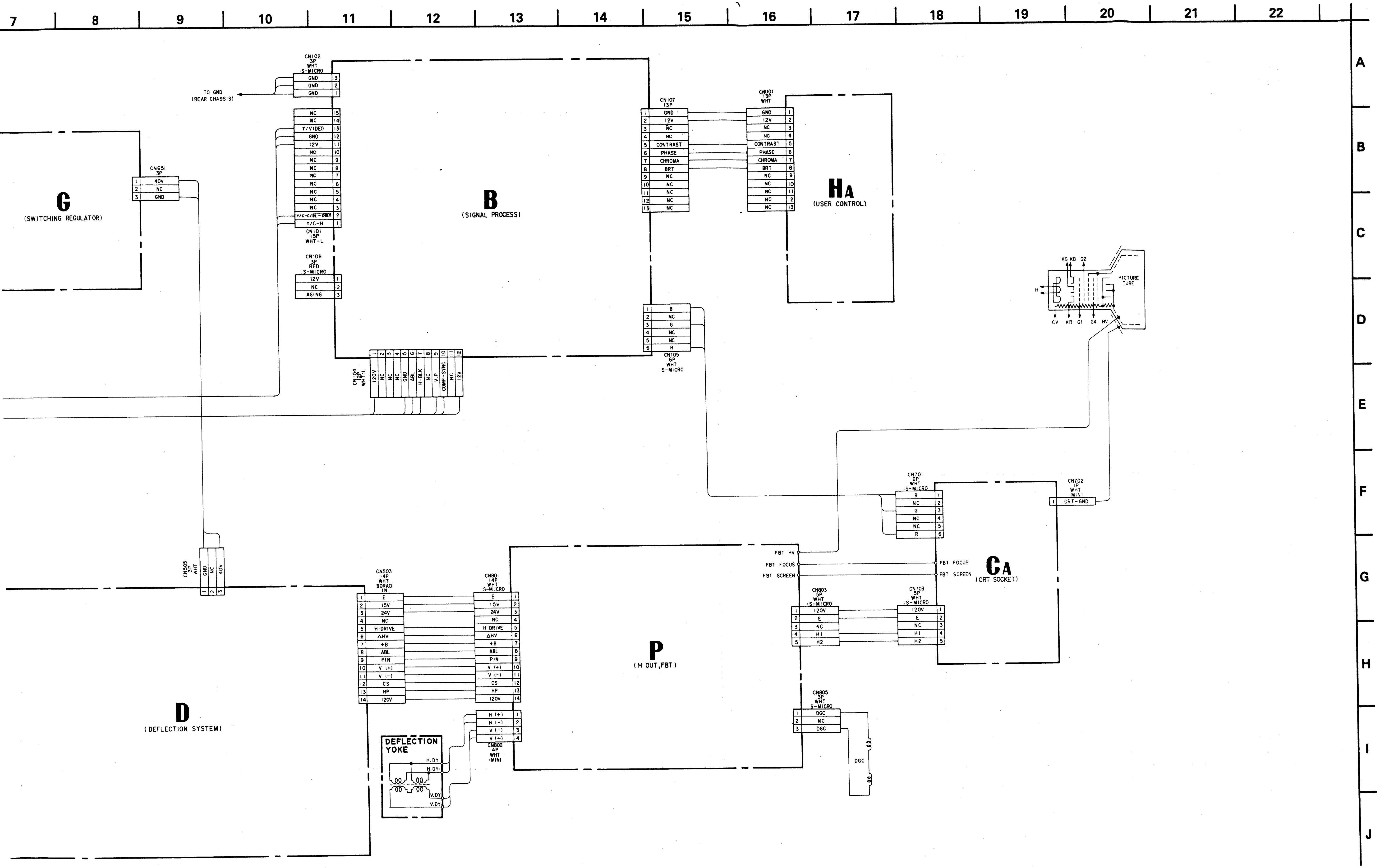
Example of sweep signal output waveform

[specification]
6MHz/0.5MHz=0±0.5dB

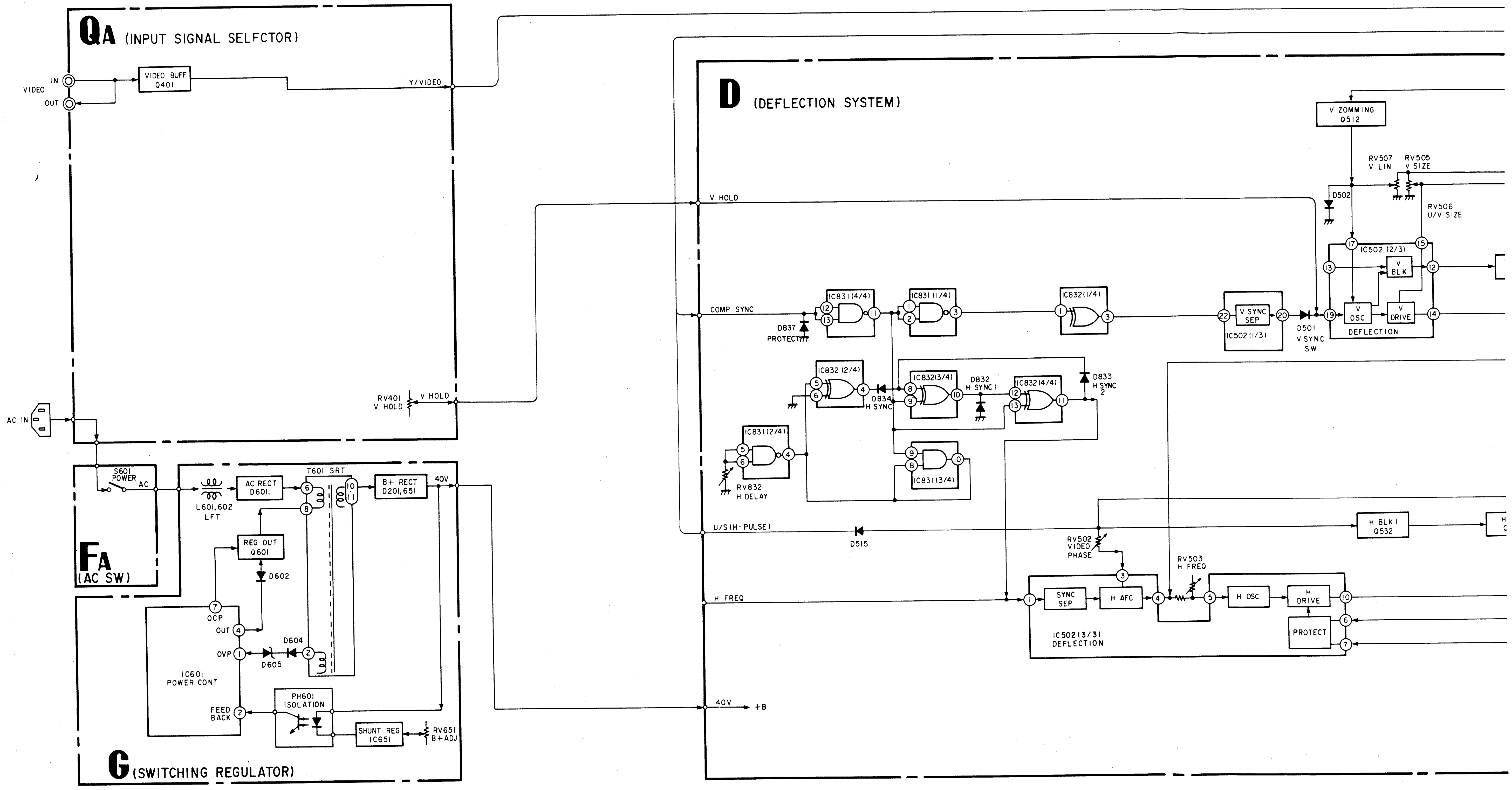
MEMO

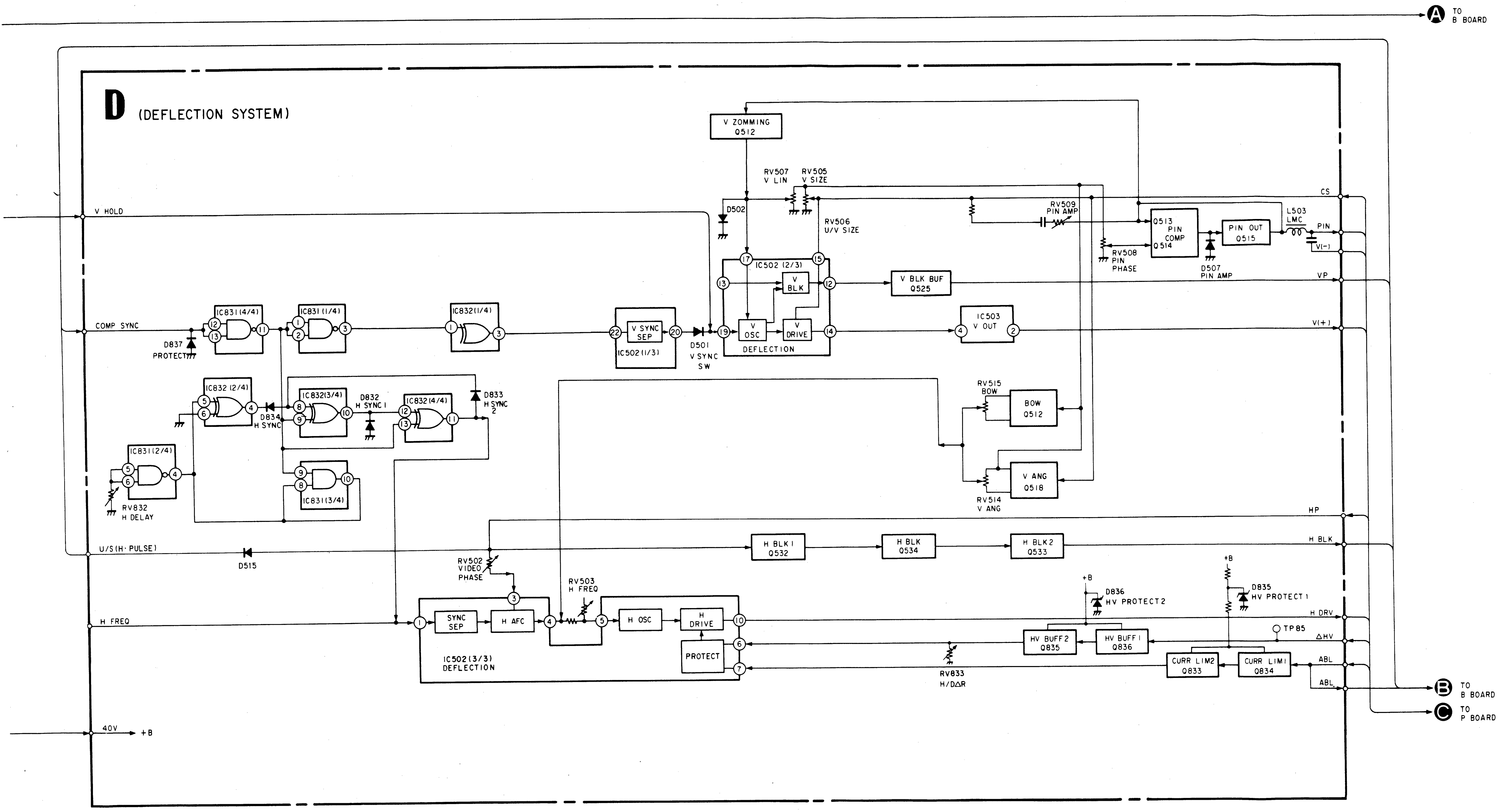
6-1. FRAME SCHEMATIC DIAGRAM

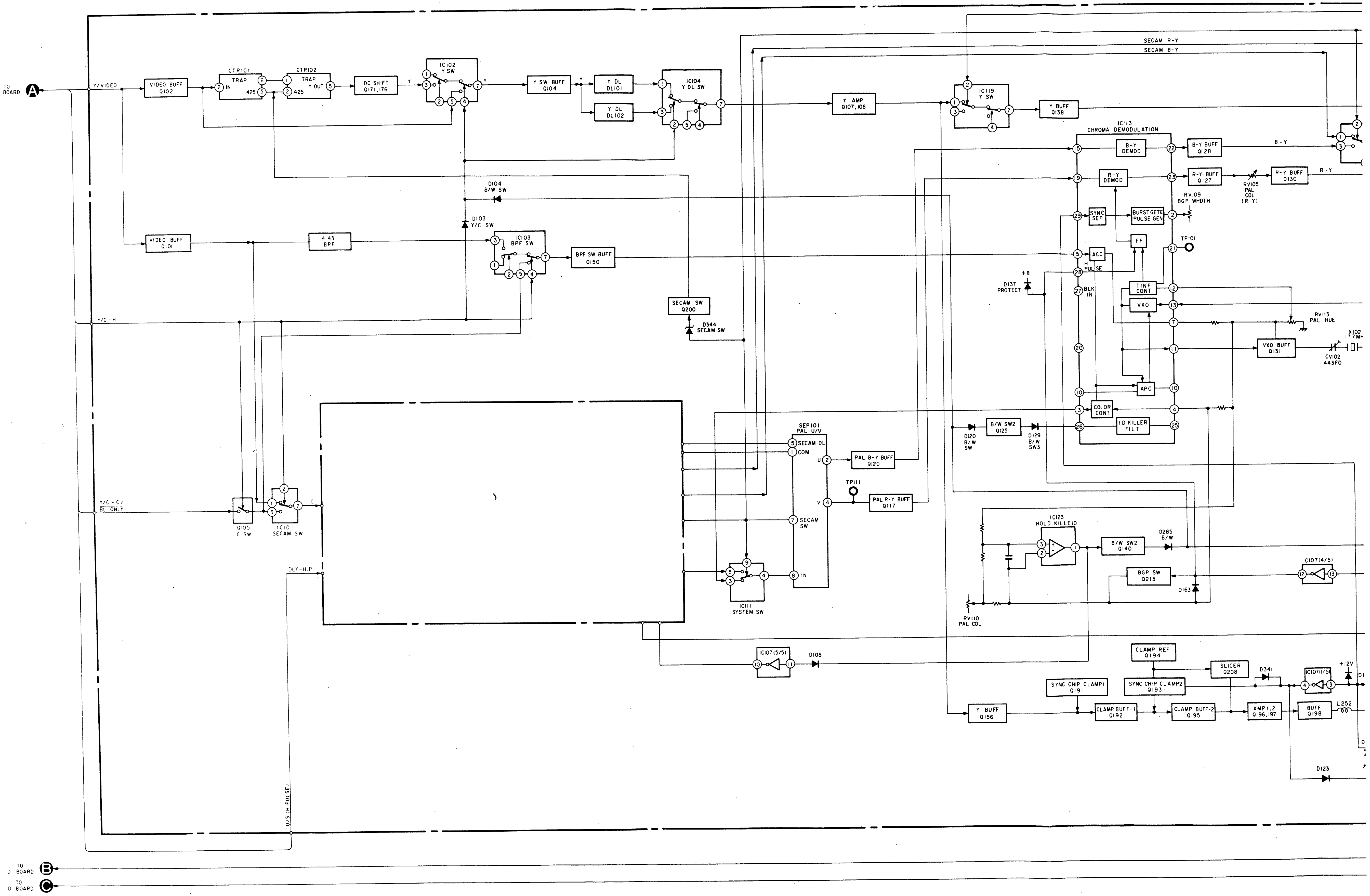

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
FA (AC SW)
CN601 4P VH
AC SW
NC
NC
AC SW
F601 3.15A
S601
R602 1.5M 1/2W RC
CN602 3P :MINI
AC OUT
NC
AC OUT
CN603 4P WHT :S-MICRO
NC
NC
NC
NC
CN610 3P MINI
AC OUT
NC
AC OUT
G (SWITCHING REGULATOR)
CN651 3P
40V
NC
GND
CN102 3P WHT S-MICRO
GND
GND
GND
TO GND (REAR CHASSIS)
B (SIGNAL PROCESS)
CN101 15P WHT-L
NC
NC
Y/VIDEO
GND
12V
NC
NC
NC
NC
NC
NC
NC
NC
Y/C-C/BL-ONLY
Y/C-H
CN109 3P RED :S-MICRO
12V
NC
AGING
CN107 13P
GND
12V
NC
NC
CONTRAST
PHASE
CHROMA
BRT
NC
NC
NC
NC
NC
CN901 13P WHT
GND
12V
NC
NC
CONTRAST
PHASE
CHROMA
BRT
NC
NC
NC
NC
NC
CN105 6P WHT :S-MICRO
B
NC
G
NC
NC
R
CN104 12P WHT-L
120V
NC
NC
NC
GND
ABL
H-BLK
NC
V.P
COMP-SYNC
NC
12V
CN403 4P WHT(L) VH
AC
NC
NC
AC
AC IN
LINE (VIDEO)
IN
OUT
QA (INPUT SIGNAL SELECTOR)
CN401 15P WHT
NC
NC
VIDEO
GND
12V
NC
NC
NC
NC
NC
NC
NC
NC
Y/C-C/BL-ONLY
Y/C-H
CN404 4P WHT
NC
15V
V.HOLD
GND
CN505 3P WHT
GND
NC
40V
D (DEFLECTION SYSTEM)
CN501 3P WHT :S-MICRO
H-FREQ
NC
GND
CN502 12P WHT-L
120V
NC
NC
NC
GND
ABL
H-BLK
NC
V.P
COMP-SYNC
NC
12V
CN509 3P WHT :S-MICRO
GND
GND
GND
TO GND (REAR CHASSIS)
CN504 4P WHT S-MICRO
NC
15V
V.HOLD
GND
CN503 14P WHT BORAD IN
E
15V
24V
NC
H-DRIVE
ΔHV
+B
ABL
PIN
V (+)
V (-)
CS
HP
120V
CN801 14P WHT :S-MICRO
E
15V
24V
NC
H-DRIVE
ΔHV
+B
ABL
PIN
V (+)
V (-)
CS
HP
120V
DEFLECTION YOKE
H.DY
H.DY
V.DY
V.DY
CN802 4P WHT :MINI
H (+)
H (-)
V (-)
V (+)
P (H OUT, FBT)
FBT HV
FBT FOCUS
FBT SCREEN

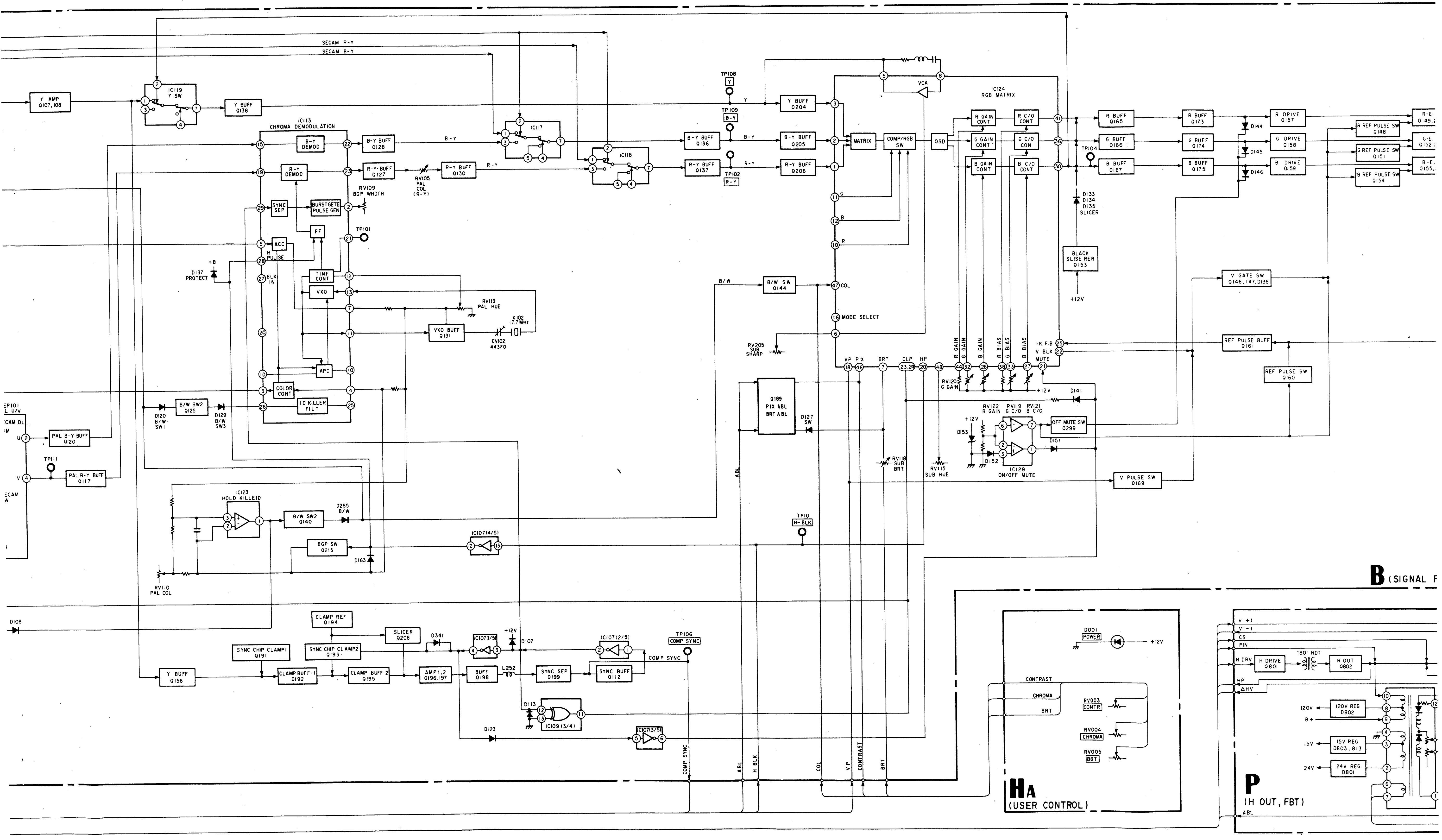

7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
A
B
C
D
E
F
G
H
I
J
G
(SWITCHING REGULATOR)
CN651 3P
1 40V
2 NC
3 GND
B
(SIGNAL PROCESS)
CN102 3P WHT :S-MICRO
GND 3
GND 2
GND 1
TO GND (REAR CHASSIS)
NC 15
NC 14
Y/VIDEO 13
GND 12
12V 11
NC 10
NC 9
NC 8
NC 7
NC 6
NC 5
NC 4
NC 3
Y/C-C/BL-ONLY 2
Y/C-H 1
CN101 15P WHT-L
CN109 3P RED :S-MICRO
12V 1
NC 2
AGING 3
CN104 12P WHT-L
1 120V
2 NC
3 NC
4 NC
5 GND
6 ABL
7 H-BLK
8 NC
9 V.P.
10 COMP-SYNC
11 NC
12 12V
CN107 13P
1 GND
2 12V
3 NC
4 NC
5 CONTRAST
6 PHASE
7 CHROMA
8 BRT
9 NC
10 NC
11 NC
12 NC
13 NC
CN105 6P WHT :S-MICRO
1 B
2 NC
3 G
4 NC
5 NC
6 R
CNU01 13P WHT
GND 1
12V 2
NC 3
NC 4
CONTRAST 5
PHASE 6
CHROMA 7
BRT 8
NC 9
NC 10
NC 11
NC 12
NC 13
HA
(USER CONTROL)
KG KB G2
H
PICTURE TUBE
CV KR G1 G4 HV
CN701 6P WHT :S-MICRO
B 1
NC 2
G 3
NC 4
NC 5
R 6
CN702 1P WHT MINI
1 CRT-GND
CA
(CRT SOCKET)
FBT FOCUS
FBT SCREEN
FBT HV
FBT FOCUS
FBT SCREEN
CN703 5P WHT :S-MICRO
120V 1
E 2
NC 3
H1 4
H2 5
CN803 5P WHT :S-MICRO
1 120V
2 E
3 NC
4 H1
5 H2
P
(H OUT,FBT)
CN805 3P WHT S-MICRO
1 DGC
2 NC
3 DGC
DGC
CN505 3P WHT
1 GND
2 NC
3 40V
D
(DEFLECTION SYSTEM)
CN503 14P WHT BORAD IN
1 E
2 15V
3 24V
4 NC
5 H-DRIVE
6 ΔHV
7 +B
8 ABL
9 PIN
10 V(+)
11 V(−)
12 CS
13 HP
14 120V
CN801 14P WHT :S-MICRO
E 1
15V 2
24V 3
NC 4
H-DRIVE 5
ΔHV 6
+B 7
ABL 8
PIN 9
V(+) 10
V(−) 11
CS 12
HP 13
120V 14
H(+) 1
H(−) 2
V(−) 3
V(+) 4
CN802 4P WHT :MINI
DEFLECTION YOKE
H.DY
H.DY
V.DY
V.DY

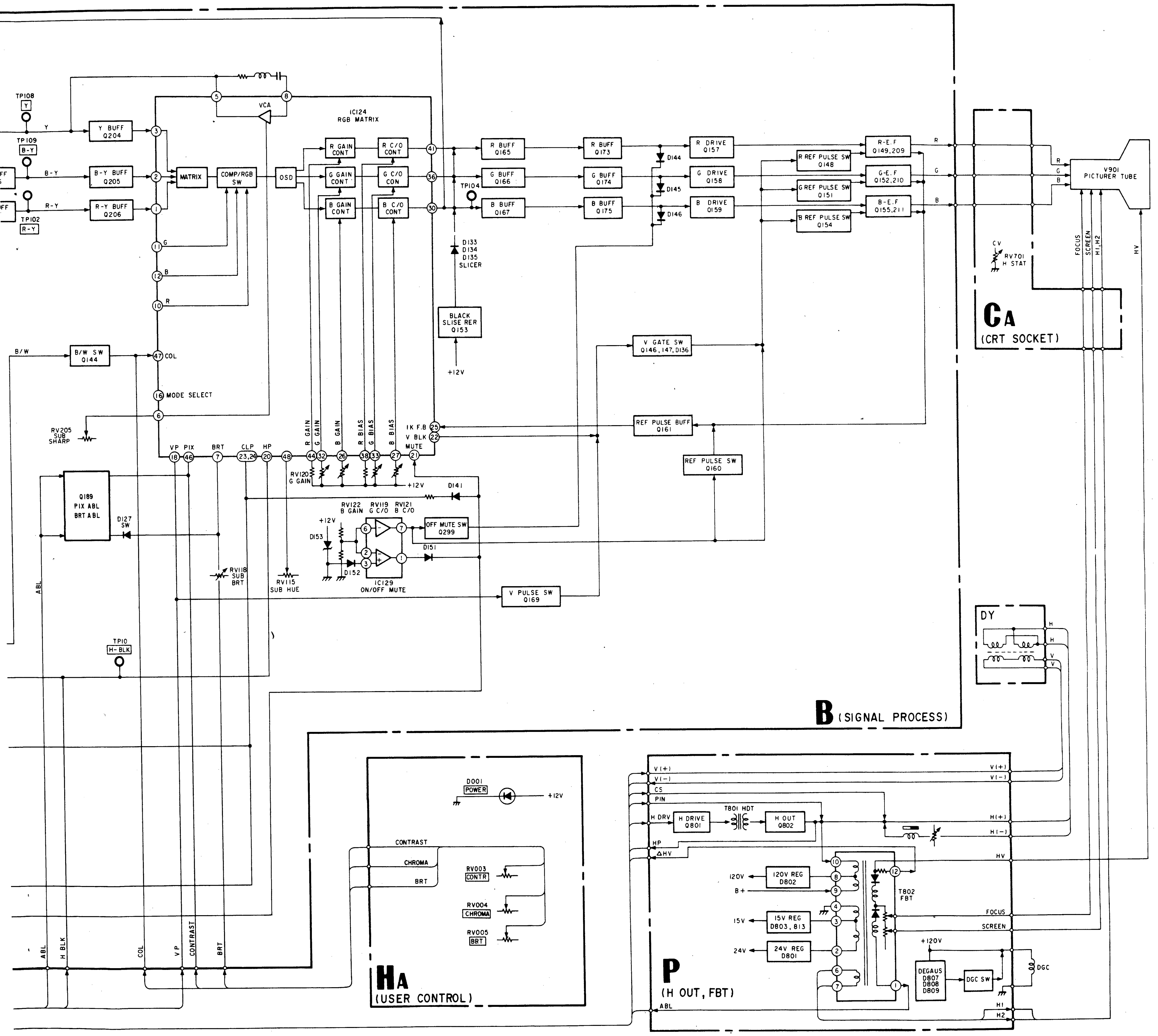
6-2. BLOCK DIAGRAM


QA (INPUT SIGNAL SELFCTOR)
VIDEO
IN
OUT
VIDEO BUFF Q401
Y/VIDEO
RV401 V HOLD
V HOLD
AC IN
S601 POWER
AC
FA (AC SW)
L601,602 LFT
AC RECT D601.
T601 SRT
B+ RECT D201,651
40V
REG OUT Q601
D602
OCP
OUT
OVP
D604
D605
IC601 POWER CONT
FEED BACK
PH601 ISOLATION
SHUNT REG IC651
RV651 B+ADJ
G (SWITCHING REGULATOR)
D (DEFLECTION SYSTEM)
V HOLD
COMP SYNC
D837 PROTECT
IC831(4/4)
IC831(1/4)
IC832(1/4)
IC832(2/4)
IC832(3/4)
IC832(4/4)
IC831(2/4)
IC831(3/4)
D834 H SYNC
D832 H SYNC 1
D833 H SYNC 2
RV832 H DELAY
V SYNC SEP
IC502(1/3)
D501 V SYNC SW
V ZOMMING Q512
RV507 V LIN
RV505 V SIZE
D502
RV506 U/V SIZE
IC502 (2/3)
V BLK
V OSC
V DRIVE
DEFLECTION
U/S(H-PULSE)
D515
H BLK1 Q532
RV502 VIDEO PHASE
RV503 H FREQ
H FREQ
SYNC SEP
H AFC
H OSC
H DRIVE
PROTECT
IC502(3/3) DEFLECTION
40V
+B

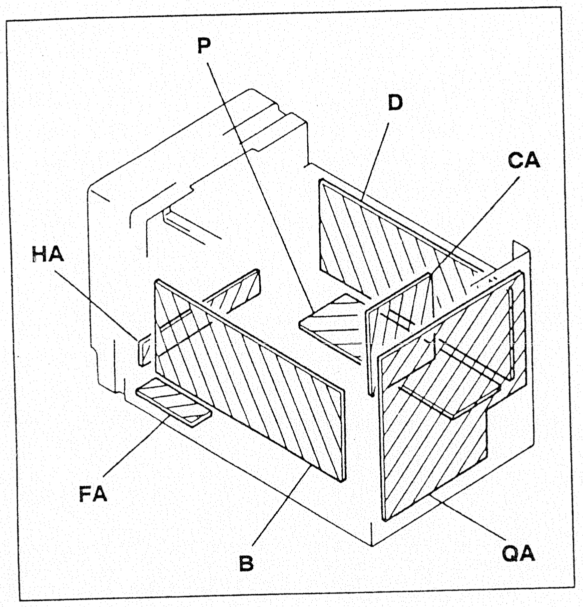

TO
B BOARD
D (DEFLECTION SYSTEM)
V ZOMMING
Q512
RV507
V LIN
RV505
V SIZE
D502
RV506
U/V SIZE
CS
RV509
PIN AMP
Q513
PIN
COMP
Q514
PIN OUT
Q515
L503
LMC
PIN
V(-)
RV508
PIN
PHASE
D507
PIN AMP
V HOLD
IC502 (2/3)
V
BLK
V BLK BUF
Q525
VP
V
OSC
V
DRIVE
DEFLECTION
IC503
V OUT
V(+)
COMP SYNC
IC831(4/4)
IC831 (1/4)
IC832(1/4)
V SYNC
SEP
IC502 (1/3)
D501
V SYNC
SW
D837
PROTECT
IC832 (2/4)
IC832(3/4)
D832
H SYNC 1
IC832(4/4)
D833
H SYNC
2
D834
H SYNC
RV515
BOW
BOW
Q512
IC831(2/4)
RV832
H DELAY
IC831(3/4)
V ANG
Q518
RV514
V ANG
HP
U/S(H·PULSE)
D515
H BLK1
Q532
H BLK
Q534
H BLK2
Q533
H BLK
RV502
VIDEO
PHASE
RV503
H FREQ
+B
D836
HV PROTECT2
D835
HV PROTECT1
H FREQ
SYNC
SEP
H AFC
H OSC
H
DRIVE
H DRV
TP85
ΔHV
HV BUFF2
Q835
HV BUFF1
Q836
PROTECT
IC502(3/3)
DEFLECTION
CURR LIM2
Q833
CURR LIM1
Q834
ABL
ABL
RV833
H/ΔR
TO
B BOARD
TO
P BOARD
40V
+B


TO QA BOARD
A
Y/VIDEO
VIDEO BUFF Q102
CTR101 TRAP IN 425
CTR102 TRAP Y OUT 425
DC SHIFT Q171,176
Y
IC102 Y SW
Y SW BUFF Q104
Y DL DL101
Y DL DL102
IC104 Y DL SW
Y AMP Q107,108
IC119 Y SW
Y BUFF Q138
SECAM R-Y
SECAM B-Y
IC113 CHROMA DEMODULATION
B-Y DEMOD
R-Y DEMOD
SYNC SEP
BURST GETE PULSE GEN
FF
ACC
H PULSE
BLK IN
TINF CONT
VXO
APC
COLOR CONT
ID KILLER FILT
B-Y BUFF Q128
B-Y
R-Y BUFF Q127
RV105 PAL COL (R-Y)
R-Y BUFF Q130
R-Y
RV109 BGP WHDTH
TP101
RV113 PAL HUE
VXO BUFF Q131
X102 17.7MH
CV102 443FO
D137 PROTECT
+B
D120 B/W SW1
B/W SW2 Q125
D129 B/W SW3
D104 B/W SW
D103 Y/C SW
VIDEO BUFF Q101
4.43 BPF
IC103 BPF SW
BPF SW BUFF Q150
SECAM SW Q200
D344 SECAM SW
Y/C-H
Y/C-C/BL ONLY
Q105 C SW
IC101 SECAM SW
C
DLY-H.P
U/S(H PULSE)
SEP101 PAL U/V
SECAM DL
COM
U
V
SECAM SW
IN
TP111
PAL B-Y BUFF Q120
PAL R-Y BUFF Q117
IC111 SYSTEM SW
IC123 HOLD KILLEID
B/W SW2 Q140
D285 B/W
BGP SW Q213
D163
RV110 PAL COL
IC107(4/5)
IC107(5/5)
D108
CLAMP REF Q194
SLICER Q208
D341
IC107(1/5)
+12V
SYNC CHIP CLAMP1 Q191
SYNC CHIP CLAMP2 Q193
Y BUFF Q156
CLAMP BUFF-1 Q192
CLAMP BUFF-2 Q195
AMP1,2 Q196,197
BUFF Q198
L252
D123
TO D BOARD B
TO D BOARD C


SECAM R-Y
SECAM B-Y
Y AMP Q107,108
IC119 Y SW
Y BUFF Q138
IC113 CHROMA DEMODULATION
B-Y DEMOD
R-Y DEMOD
B-Y BUFF Q128
R-Y BUFF Q127
RV105 PAL COL (R-Y)
R-Y BUFF Q130
B-Y
R-Y
IC117
IC118
SYNC SEP
BURSTGETE PULSE GEN
RV109 BGP WHDTH
FF
TP101
ACC
H PULSE
BLK IN
TINT CONT
VXO
RV113 PAL HUE
VXO BUFF Q131
X102 17.7MHz
CV102 443F0
APC
COLOR CONT
ID KILLER FILT
D137 PROTECT
+B
D120 B/W SW1
B/W SW2 Q125
D129 B/W SW3
TP101 L U/V
CAM DL
PAL B-Y BUFF Q120
TP111
PAL R-Y BUFF Q117
ECAM
IC123 HOLD KILLEID
B/W SW2 Q140
D285 B/W
BGP SW Q213
D163
IC107(4/5)
RV110 PAL COL
TP108 Y
TP109 B-Y
TP102 R-Y
Y
B-Y BUFF Q136
R-Y BUFF Q137
Y BUFF Q204
B-Y BUFF Q205
R-Y BUFF Q206
B/W
B/W SW Q144
COL
MODE SELECT
RV205 SUB SHARP
MATRIX
COMP/RGB SW
VCA
OSD
IC124 RGB MATRIX
R GAIN CONT
G GAIN CONT
B GAIN CONT
R C/O CONT
G C/O CON
B C/O CONT
R BUFF Q165
G BUFF Q166
B BUFF Q167
TP104
R BUFF Q173
G BUFF Q174
B BUFF Q175
D144
D145
D146
R DRIVE Q157
G DRIVE Q158
B DRIVE Q159
R REF PULSE SW Q148
G REF PULSE SW Q151
B REF PULSE SW Q154
R-E Q149
G-E Q152
B-E Q155
D133 D134 D135 SLICER
BLACK SLISE RER Q153
+12V
V GATE SW Q146,147,D136
REF PULSE BUFF Q161
REF PULSE SW Q160
R GAIN
G GAIN
G GAIN
R BIAS
G BIAS
B BIAS
IK F.B
V BLK
MUTE
VP PIX
BRT
CLP
HP
RV120 G GAIN
RV122 B GAIN
RV119 G C/O
RV121 B C/O
D141
Q189 PIX ABL BRT ABL
D127 SW
D153
D152
D151
OFF MUTE SW Q299
IC129 ON/OFF MUTE
RV118 SUB BRT
RV115 SUB HUE
V PULSE SW Q169
ABL
TP10 H-BLK
D108
CLAMP REF Q194
SLICER Q208
D341
IC107(1/5)
D107
IC107(2/5)
TP106 COMP SYNC
SYNC CHIP CLAMP1 Q191
SYNC CHIP CLAMP2 Q193
COMP SYNC
Y BUFF Q156
CLAMP BUFF-1 Q192
CLAMP BUFF-2 Q195
AMP1,2 Q196,197
BUFF Q198
L252
SYNC SEP Q199
SYNC BUFF Q112
D113
IC109(3/4)
D123
IC107(3/5)
COMP SYNC
ABL
H BLK
COL
VP
CONTRAST
BRT
B (SIGNAL P
D001 POWER
CONTRAST
CHROMA
BRT
RV003 CONTR
RV004 CHROMA
RV005 BRT
HA (USER CONTROL)
V(+)
V(-)
CS
PIN
H DRV
H DRIVE Q801
T801 HDT
H OUT Q802
HP
ΔHV
120V
120V REG D802
B+
15V
15V REG D803,813
24V
24V REG D801
P (H OUT, FBT)
ABL


TP108 Y
TP109 B-Y
TP102 R-Y
Y BUFF Q204
B-Y BUFF Q205
R-Y BUFF Q206
VCA
IC124 RGB MATRIX
MATRIX
COMP/RGB SW
OSD
R GAIN CONT
G GAIN CONT
B GAIN CONT
R C/O CONT
G C/O CON
B C/O CONT
TP104
R BUFF Q165
G BUFF Q166
B BUFF Q167
R BUFF Q173
G BUFF Q174
B BUFF Q175
D144
D145
D146
R DRIVE Q157
G DRIVE Q158
B DRIVE Q159
R REF PULSE SW Q148
G REF PULSE SW Q151
B REF PULSE SW Q154
R-E.F Q149,209
G-E.F Q152,210
B-E.F Q155,211
V901 PICTURER TUBE
D133 D134 D135 SLICER
BLACK SLISE RER Q153
+12V
V GATE SW Q146,147,D136
CV RV701 H STAT
FOCUS
SCREEN
H1,H2
HV
CA (CRT SOCKET)
B/W
B/W SW Q144
COL
MODE SELECT
RV205 SUB SHARP
R GAIN
G GAIN
B GAIN
R BIAS
G BIAS
B BIAS
IK F.B
V BLK
MUTE
REF PULSE BUFF Q161
REF PULSE SW Q160
VP PIX BRT CLP HP
RV120 G GAIN
+12V
D141
Q189 PIX ABL BRT ABL
D127 SW
RV122 B GAIN
RV119 G C/O
RV121 B C/O
OFF MUTE SW Q299
D153
D152
D151
IC129 ON/OFF MUTE
RV118 SUB BRT
RV115 SUB HUE
V PULSE SW Q169
ABL
TP10 H-BLK
DY
B (SIGNAL PROCESS)
D001 POWER
+12V
CONTRAST
CHROMA
BRT
RV003 CONTR
RV004 CHROMA
RV005 BRT
HA (USER CONTROL)
ABL
H BLK
COL
VP
CONTRAST
BRT
V(+)
V(-)
CS
PIN
H DRV
H DRIVE Q801
T801 HDT
H OUT Q802
H(+)
H(-)
HP
ΔHV
HV
120V
120V REG D802
B+
15V
15V REG D803,813
24V
24V REG D801
T802 FBT
FOCUS
SCREEN
+120V
DEGAUS D807 D808 D809
DGC SW
DGC
H1
H2
P (H OUT, FBT)
ABL

6-3. CIRCUIT BOARD LOCATION


P
D
CA
HA
FA
B
QA

6-4. SCHEMATIC DIAGRAMS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytic.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power ¼ W
- All resistors are in ohms.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- △ : internal component.
- ▭ : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⧓ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪ , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⧓ and repeat the adjustment until the specified value is achieved.
- When replacing the part in below table be sure to perform the related adjustment.

Part replaced (◪)	Adjustment (⧓)
IC601, IC651, PH601, C654, R653, R655, R656, R657, RV651	RV651 (B+ MAX)
IC502, Q833, Q834, Q835, Q836, D835, D836, C519, C843, C844, C845, C846, C847, C848, RV833, R523, R850, R851, R852, R853, R854, R855, R856, R857, R858, R859, R861, R862, R863, NL801	RV833 (HOLD-DOWN)

- All voltages are in V.
- Voltage are dc with respect to groundunless otherwise noted.
- Readings are taken with a color-bar signal input.
- Readings are taken with a PAL color-bar signal input.
- ▭ : adjustment fir repair.
- Voltage variations may be noted due to normal production tolerance.
- ▬▬ : B + bus.
- ▬ ▬ ▬ : B − bus.
- ▨ : signal path.
- No mark: with PAL color-bar signal received or common voltage.
- ( ) : with SECAM color-bar signal received.
- < > : with NTSC 3.58 color-bar signal received.
- (( )) : with NTSC 4.43 color-bar signal received.
- [ ] : with S(Y/C) color-bar signal received.
- { } : with analog RGB color-bar signal received.
- ≪ ≫ : with component color-bar signal received.
- ※ : measurement impossibility

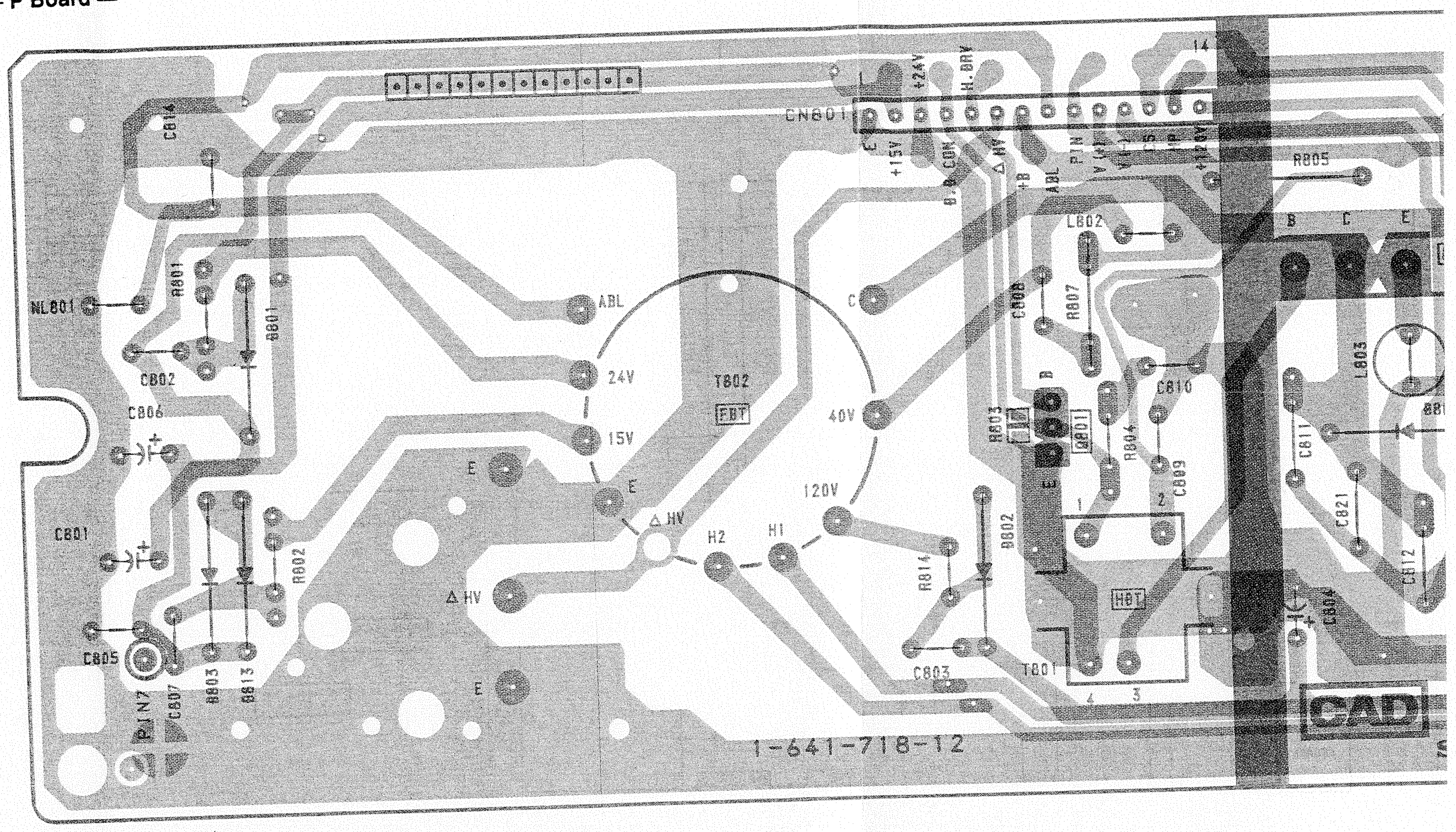
Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE WIREWOUND
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

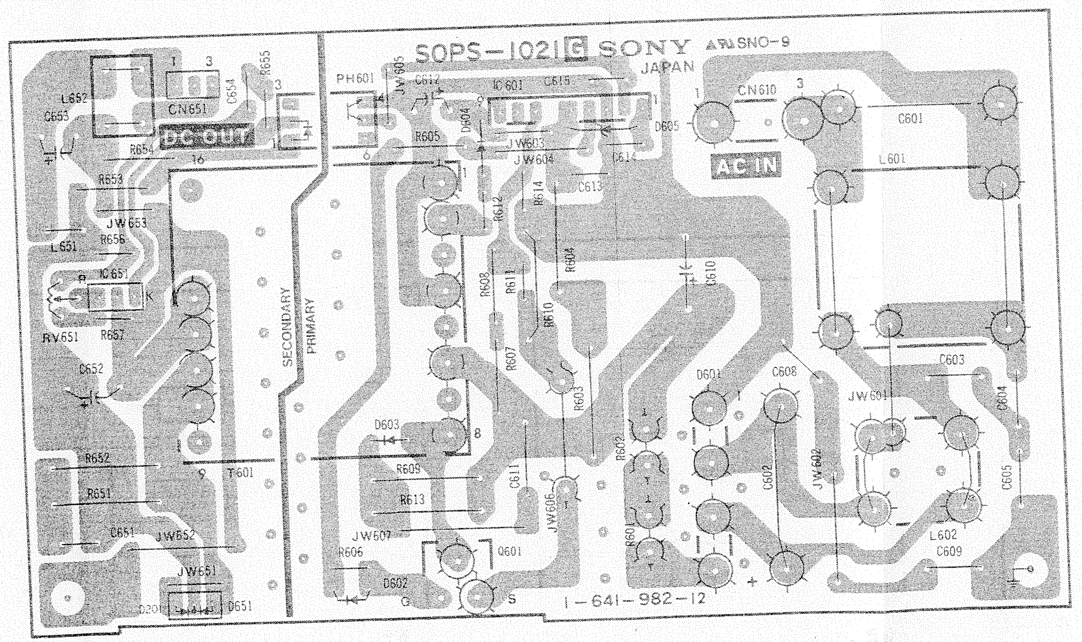
6-5. PRINTED WIRING BOARDS

P [H OUT, FBT] **G** [SWITCHING REGULATOR] **FA** [AC SW]

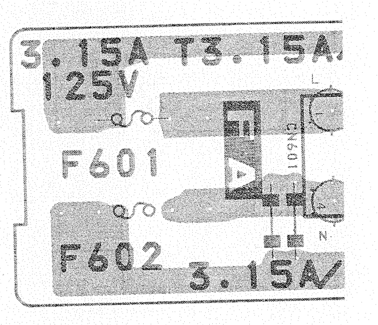
— P Board —


CN801
+15V
+24V
H.BRY
B.B.COM
△HV
+B
ABL
+12V
R805
LB02
C808
R807
L803
NL801
R801
D801
C814
C802
C806
ABL
24V
15V
T802
FBT
40V
120V
E
△HV
H2
H1
C801
R802
△HV
C805
PJN7
C807
D803
D813
R803
R814
D802
Q801
R804
C809
C810
C811
C821
C812
C804
HOT
T801
C803
B
C
E
CAD
1-641-718-12

— G Board —


SOPS-1021
SONY
JAPAN
DC OUT
AC IN
CN651
CN610
PH601
IC601
L652
C653
R654
R655
R653
JW653
L651
R656
IC651
RV651
R657
C652
R652
R651
C651
JW652
JW651
T601
SECONDARY
PRIMARY
R605
D604
JW603
JW604
C613
C614
D605
C601
L601
R612
R614
R608
R611
R610
R604
R607
R603
C610
D601
C608
JW601
C603
C604
D603
R609
R613
C611
JW606
R602
JW602
C602
C605
JW607
R606
D602
Q601
R601
L602
C609
D651
1-641-982-12

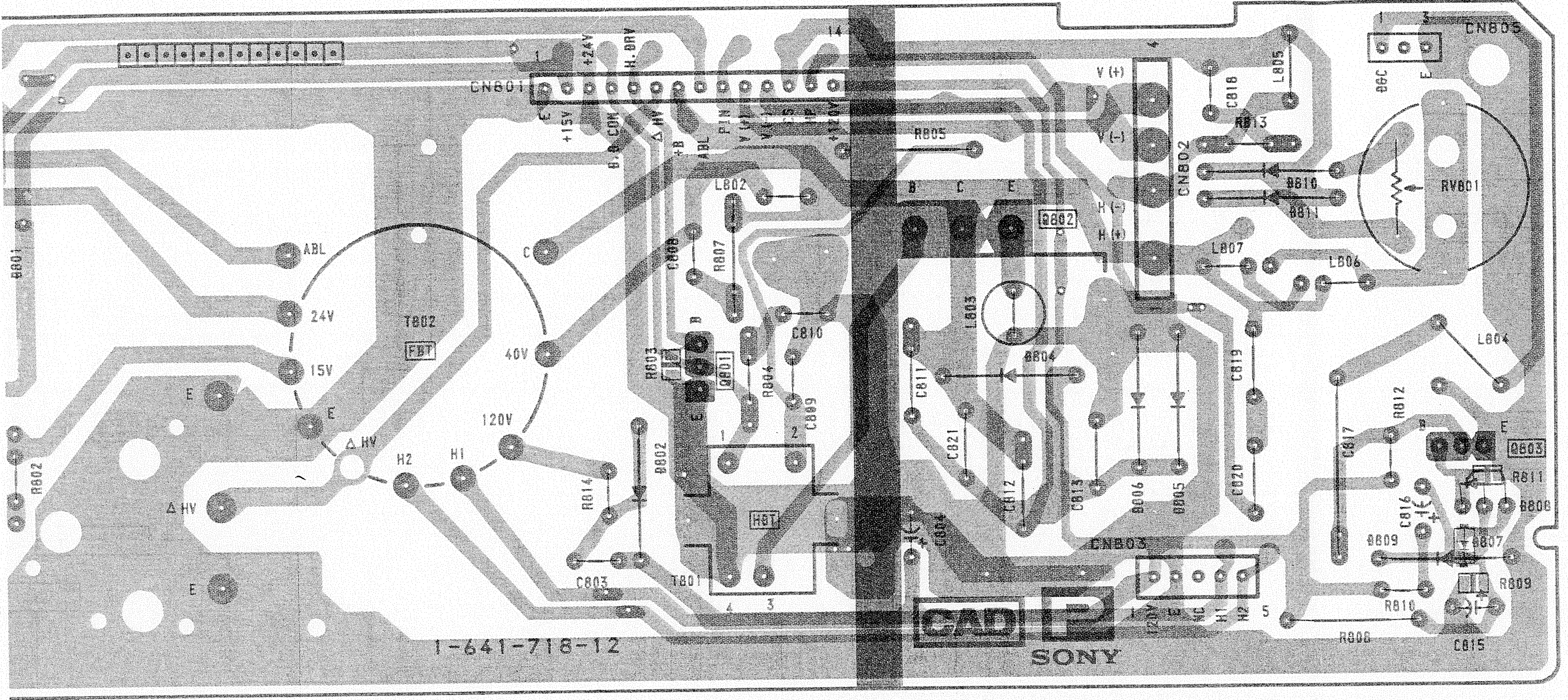
— FA Board —

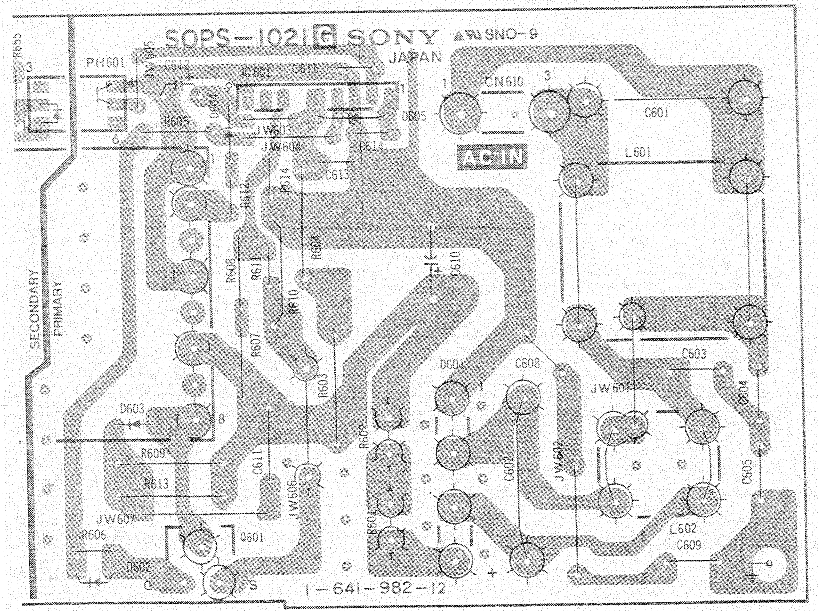

3.15A T3.15A
125V
F601
F602
3.15A
FA

DS

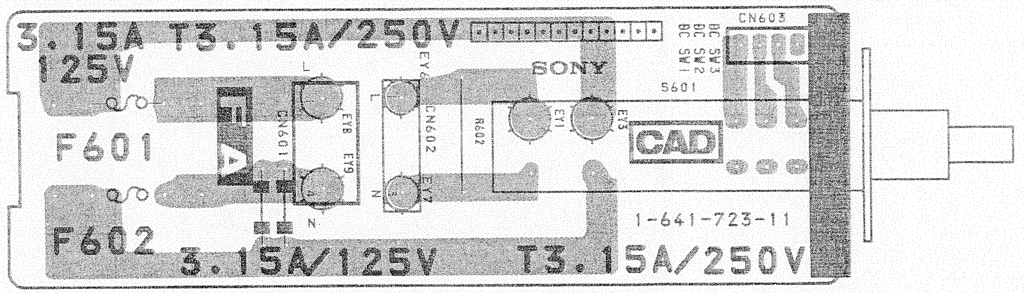
[SWITCHING REGULATOR]

FA [AC SW]


CN801
CN802
CN803
CN805
T802
FBT
T801
HBT
RV801
ABL
24V
15V
40V
120V
H2
H1
△HV
Q801
Q802
Q803
L802
L803
L804
L806
L807
D804
D805
D806
D807
D810
D811
R805
R807
R813
C808
C810
C811
C817
C819
C820
1-641-718-12
CAD
SONY


SOPS-1021G SONY
JAPAN
PH601
IC601
CN610
C601
L601
AC IN
SECONDARY
PRIMARY
C603
C604
JW601
Q601
L602
C609
D602
1-641-982-12

– FA Board –

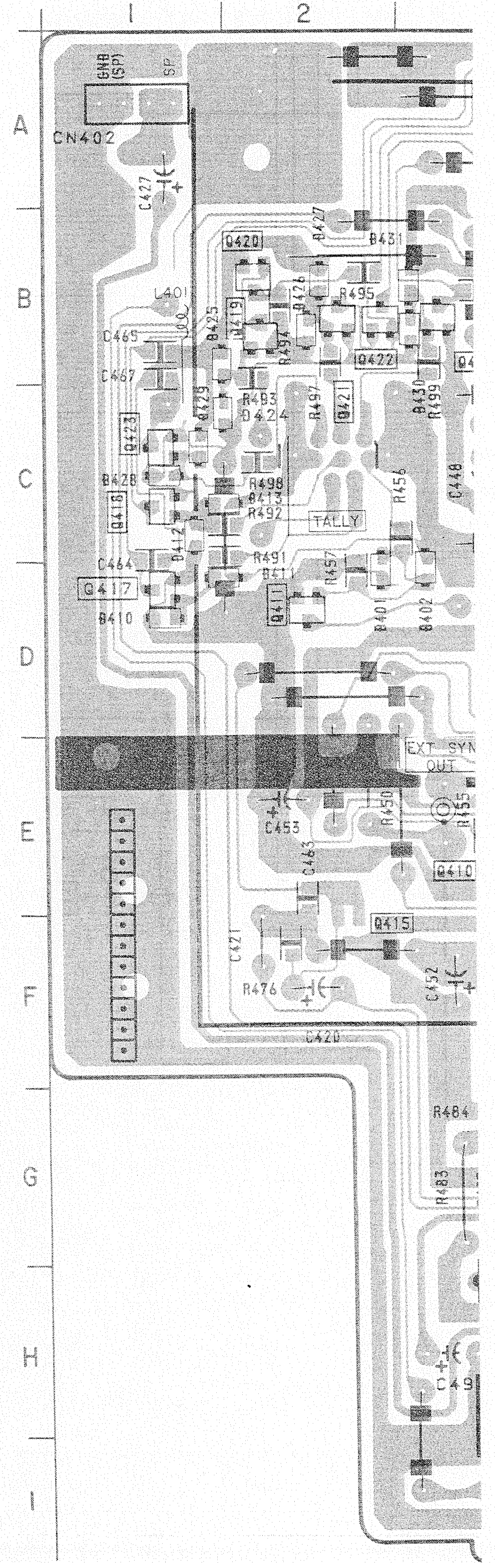

3.15A T3.15A/250V
125V
F601
F602
3.15A/125V T3.15A/250V
CN601
CN602
CN603
S601
SONY
CAD
1-641-723-11

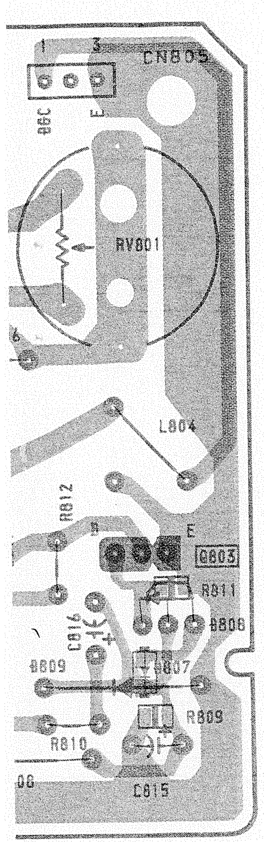
QA [INPUT SIGNAL SE

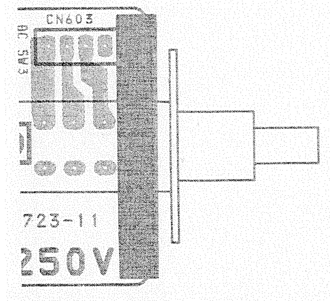
• QA BOARD

TRANSISTOR	
Q401	C – 8
VARIABLE RESISTOR	
RV401	G – 7

— QA Board —


1
2
A
B
C
D
E
F
G
H
I
CN402
Q420
Q421
Q422
Q423
Q424
Q417
Q410
Q415
L401
TALLY
EXT SYNC OUT


CN805
RV801
L804
R812
Q803
R811
D806
C816
D807
D809
R809
R810
C815

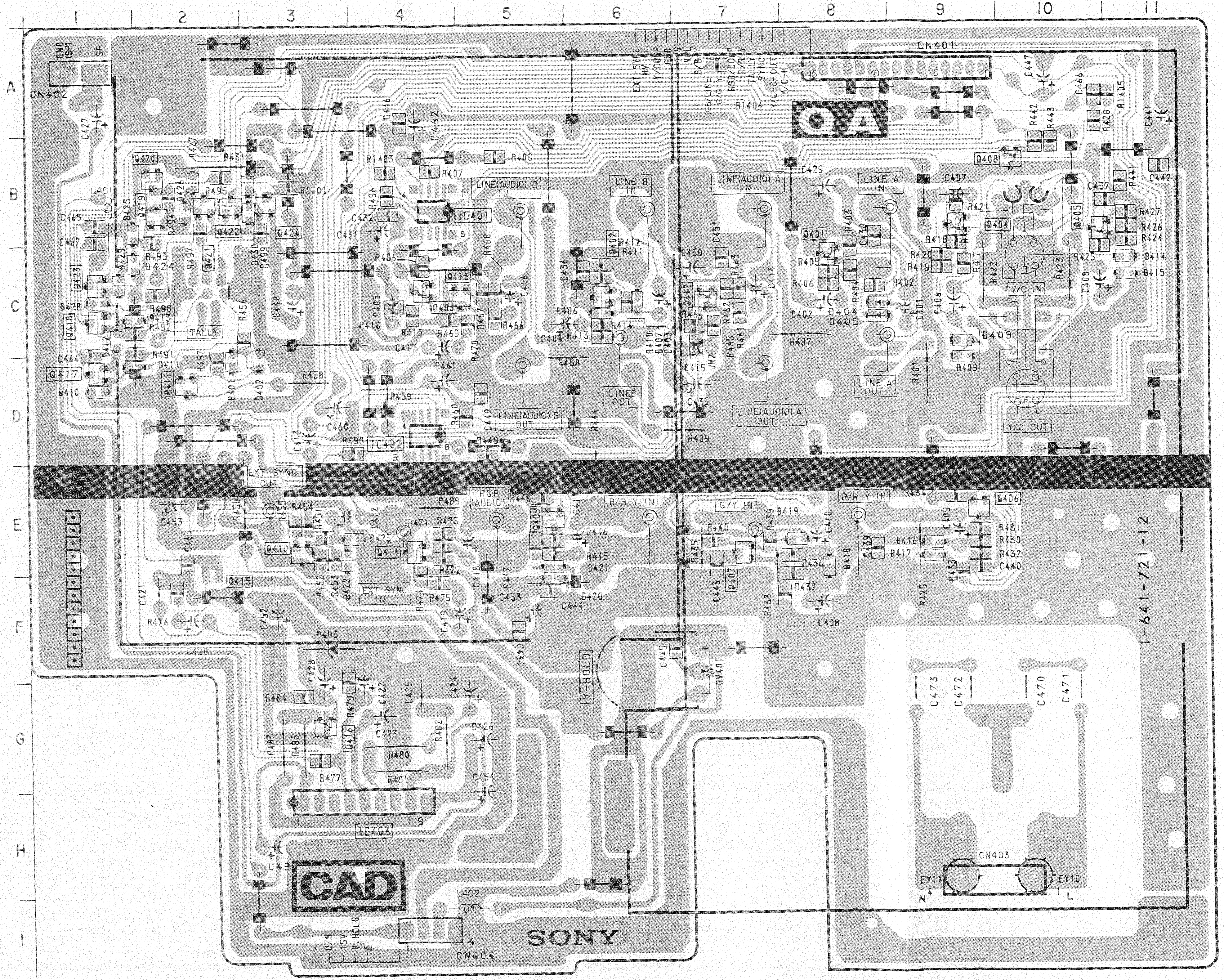

CN603
723-11
250V

QA [INPUT SIGNAL SELECTOR]

• QA BOARD

TRANSISTOR	
Q401	C – 8
VARIABLE RESISTOR	
RV401	G – 7

— QA Board —


1
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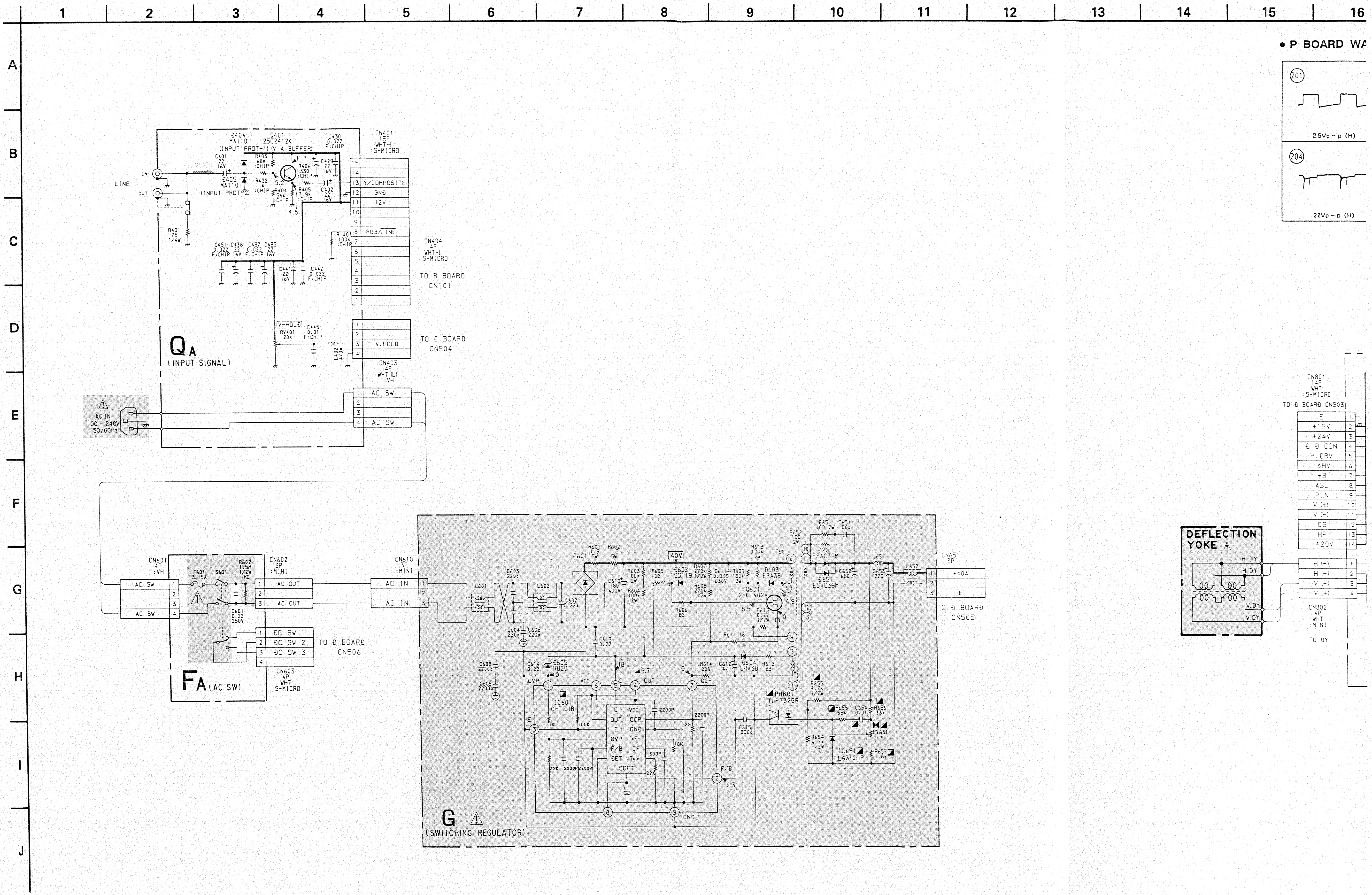
11
A
B
C
D
E
F
G
H
I
CN401
CN402
CN403
CN404
QA
CAD
SONY
LINE(AUDIO) B IN
LINE B IN
LINE(AUDIO) A IN
LINE A IN
Y/C IN
TALLY
LINE(AUDIO) B OUT
LINEB OUT
LINE(AUDIO) A OUT
LINE A OUT
Y/C OUT
EXT SYNC OUT
RGB (AUDIO)
B/B-Y IN
G/Y IN
R/R-Y IN
EXT SYNC IN
V-HOLD
IC401
IC402
IC403
RV401
1-641-721-12
EY11
EY10
N
L


1
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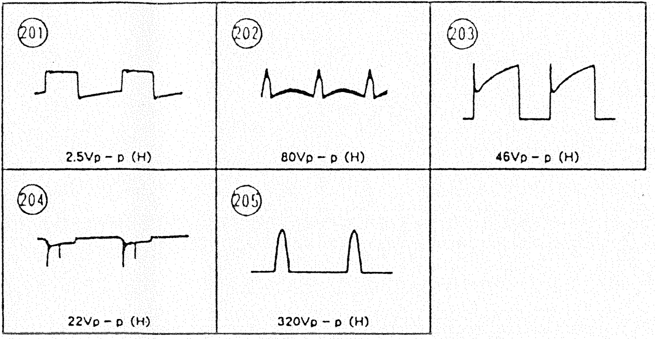
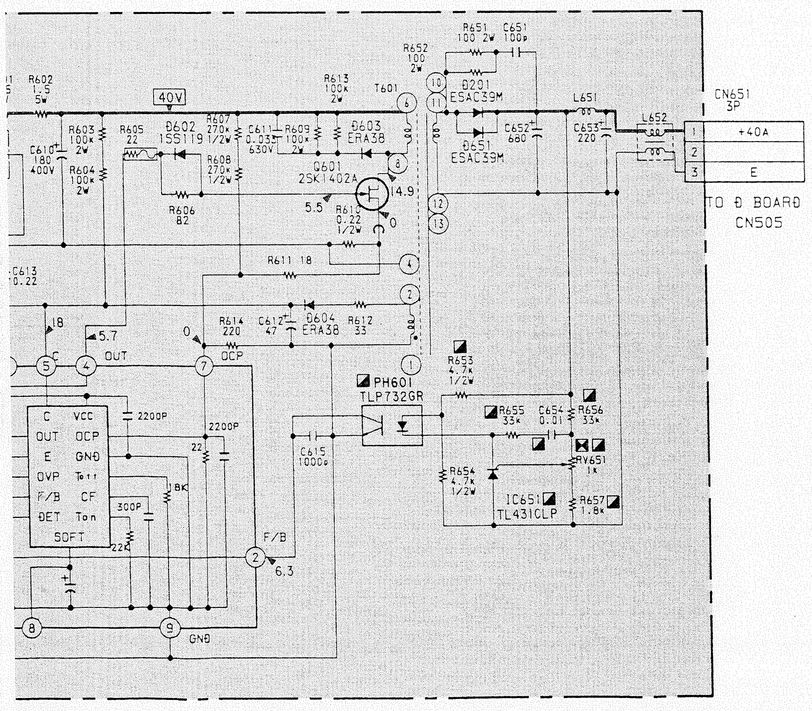
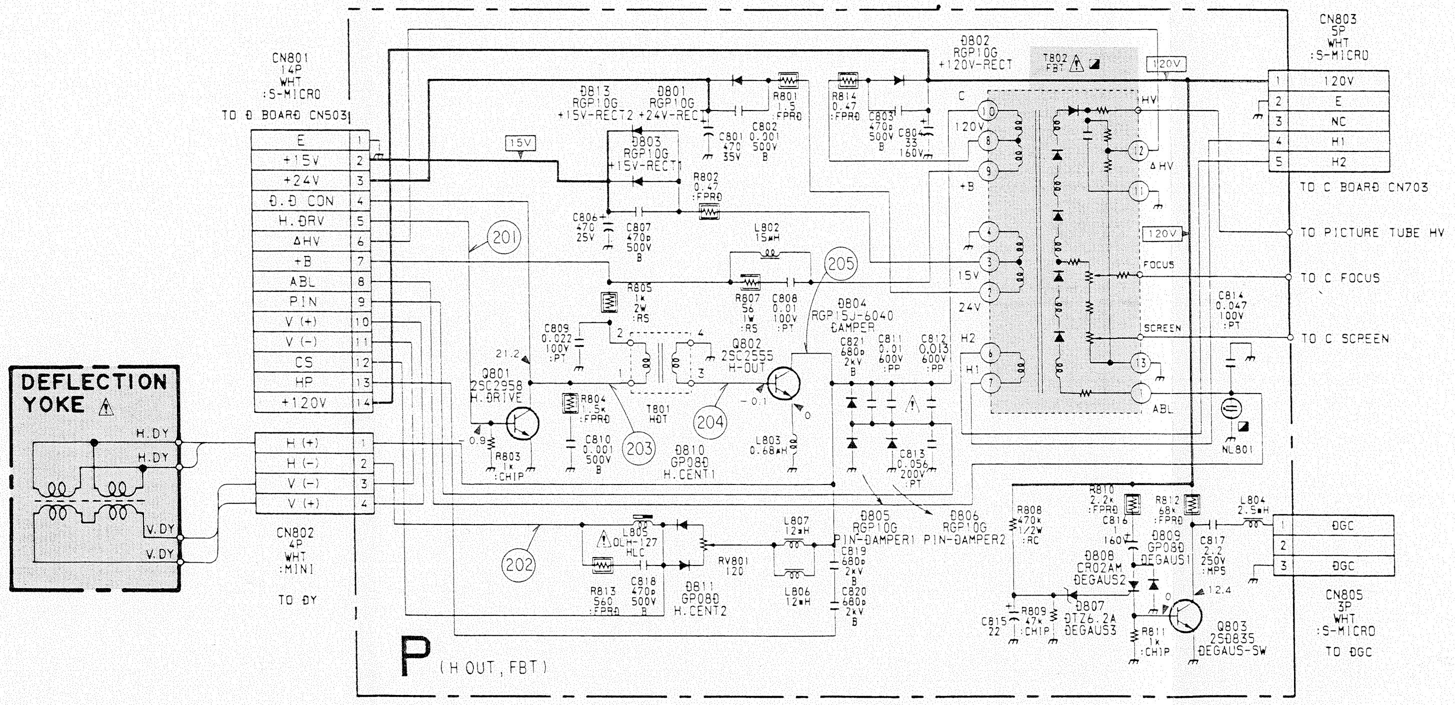
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
• P BOARD WA
201
2.5Vp – p (H)
204
22Vp – p (H)
QA
(INPUT SIGNAL)
LINE
IN
OUT
VIDEO
D404 MA110 (INPUT PROT-1)
Q401 2SC2412K (V.A BUFFER)
D405 MA110 (INPUT PROT-2)
R401 75 1/4W
CN401 15P WHT-L :S-MICRO
15
14
13 Y/COMPOSITE
12 GND
11 12V
10
9
8 RGB/LINE
7
6
5
4
3
2
1
CN404 4P WHT-L :S-MICRO
TO B BOARD CN101
V-HOLD
RV401 20k
C445 0.01 F:CHIP
L402 47µ
V.HOLD
TO D BOARD CN504
CN403 4P WHT (L) :VH
AC SW
AC SW
AC IN 100 – 240V 50/60Hz
FA (AC SW)
CN601 4P :VH
F601 3.15A
S601
R602 1.5M 1/2W :RC
C601 0.22 250V
CN602 3P :MINI
AC OUT
AC OUT
DC SW 1
DC SW 2
DC SW 3
TO D BOARD CN506
CN603 4P WHT :S-MICRO
CN610 3P :MINI
AC IN
AC IN
G
(SWITCHING REGULATOR)
L601
L602
C602 0.22
C603 220p
C604 220p
C605 220p
D601 5W
R601 1.5 5W
R602 1.5 5W
40V
C610 180 400V
R603 100k 2W
R604 100k 2W
R605 22
D602 1SS119
R606 62
R607 270k 1/2W
R608 270k 1/2W
C611 0.033 630V
R609 100k 2W
D603 ERA38
Q601 2SK1402A
R610 0.22 1/2W
R611 18
R613 100k 2W
C613 0.22
C614 0.22
D605 RD20
C608 2200p
C609 2200p
IC601 CH-101B
C VCC
OUT OCP
E GND
OVP Text
F/B CF
DET Ton
SOFT
OVP
VCC
OUT
OCP
F/B
GND
R614 220
C612 47
D604 ERA38
R612 33
PH601 TLP732GR
C615 1000p
T601
R652 100 2W
R651 100 2W
C651 100p
D201 ESAC39M
D651 ESAC39M
C652 680
L651
C653 220
L652
CN651 3P
+40A
E
TO D BOARD CN505
R653 4.7k 1/2W
R655 33k
C654 0.01
R656 33k
RV651 1k
R654 4.7k 1/2W
IC651 TL431CLP
R657 1.8k
DEFLECTION YOKE
H.DY
V.DY
CN801 14P WHT :S-MICRO
TO D BOARD CN503
E
+15V
+24V
D.D CON
H.DRV
ΔHV
+B
ABL
PIN
V (+)
V (–)
CS
HP
+120V
H (+)
H (–)
V (–)
V (+)
CN802 4P WHT :MINI
TO DY

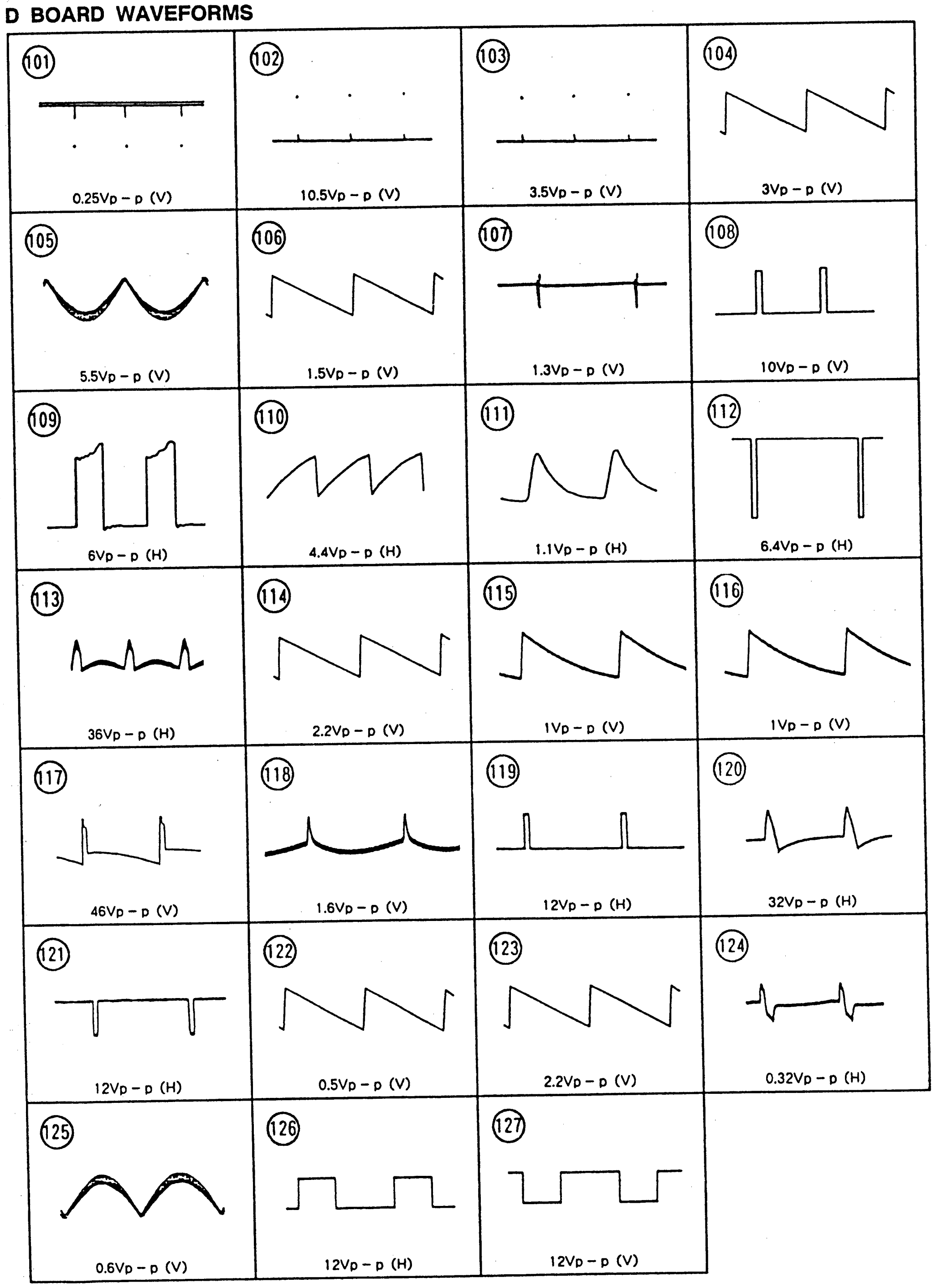
• P BOARD WAVEFORMS



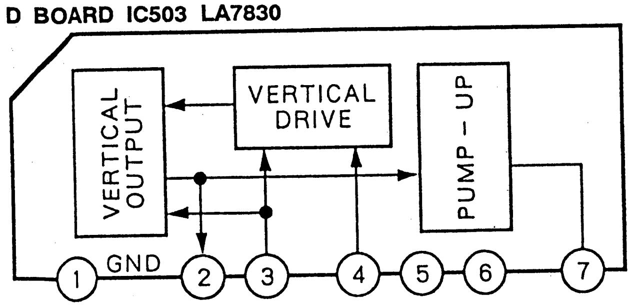

40V
Q601
2SK1402A
D602
1SS119
D603
ERA38
D604
ERA38
D201
ESAC39M
D651
ESAC39M
T601
L651
L652
CN651
3P
+40A
E
TO D BOARD
CN505
PH601
TLP732GR
IC651
TL431CLP
RV651
C
VCC
OUT
OCP
E
GND
OVP
F/B
CF
DET
Ton
SOFT
OUT
OCP
F/B
GND
5.7
14.9
5.5
6.3

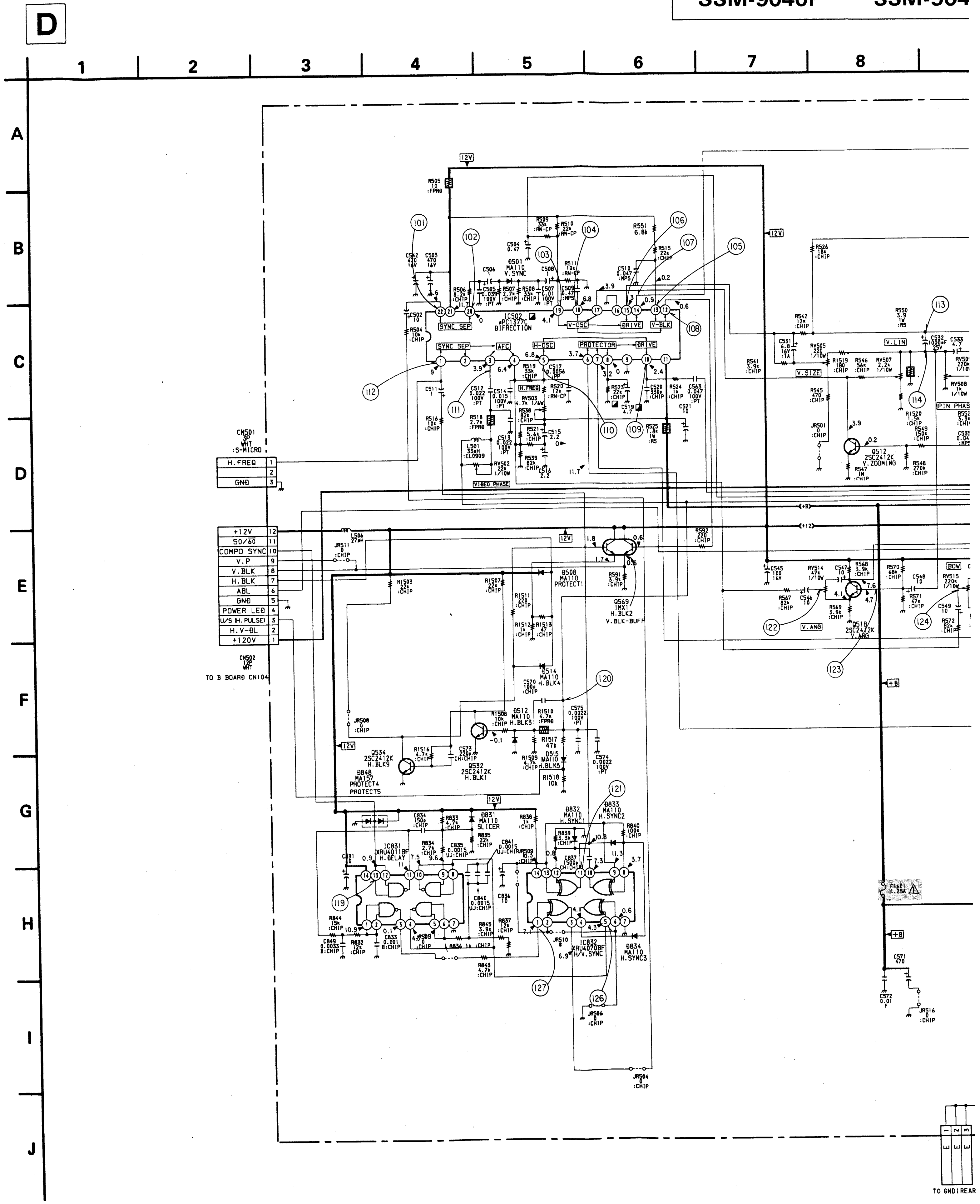

CN801
14P
WHT
:S-MICRO
TO D BOARD CN503
E
+15V
+24V
D.D CON
H.DRV
ΔHV
+B
ABL
PIN
V (+)
V (-)
CS
HP
+120V
DEFLECTION
YOKE
H.DY
V.DY
H (+)
H (-)
V (-)
V (+)
CN802
4P
WHT
:MINI
TO DY
15V
D813
RGP10G
+15V-RECT2
D801
RGP10G
+24V-RECT
D803
RGP10G
+15V-RECT1
D802
RGP10G
+120V-RECT
T802
FBT
120V
HV
ΔHV
FOCUS
SCREEN
ABL
Q801
2SC2958
H.DRIVE
Q802
2SC2555
H-OUT
T801
HDT
D804
RGP15J-6040
DAMPER
D810
GP08D
H.CENT1
D811
GP08D
H.CENT2
L805
LDLH-127
HLC
RV801
D805
RGP10G
PIN-DAMPER1
D806
RGP10G
PIN-DAMPER2
D808
CR02AM
DEGAUS2
D809
GP08D
DEGAUS1
D807
DTZ6.2A
DEGAUS3
Q803
2SD835
DEGAUS-SW
NL801
CN803
5P
WHT
:S-MICRO
120V
E
NC
H1
H2
TO C BOARD CN703
TO PICTURE TUBE HV
TO C FOCUS
TO C SCREEN
DGC
DGC
CN805
3P
WHT
:S-MICRO
TO DGC
201
202
203
204
205
21.2
-0.9
-0.1
12.4
P
(H OUT, FBT)

D BOARD WAVEFORMS



D BOARD IC503 LA7830


VERTICAL OUTPUT
VERTICAL DRIVE
PUMP – UP
GND
1
2
3
4
5
6
7


D
1
2
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4
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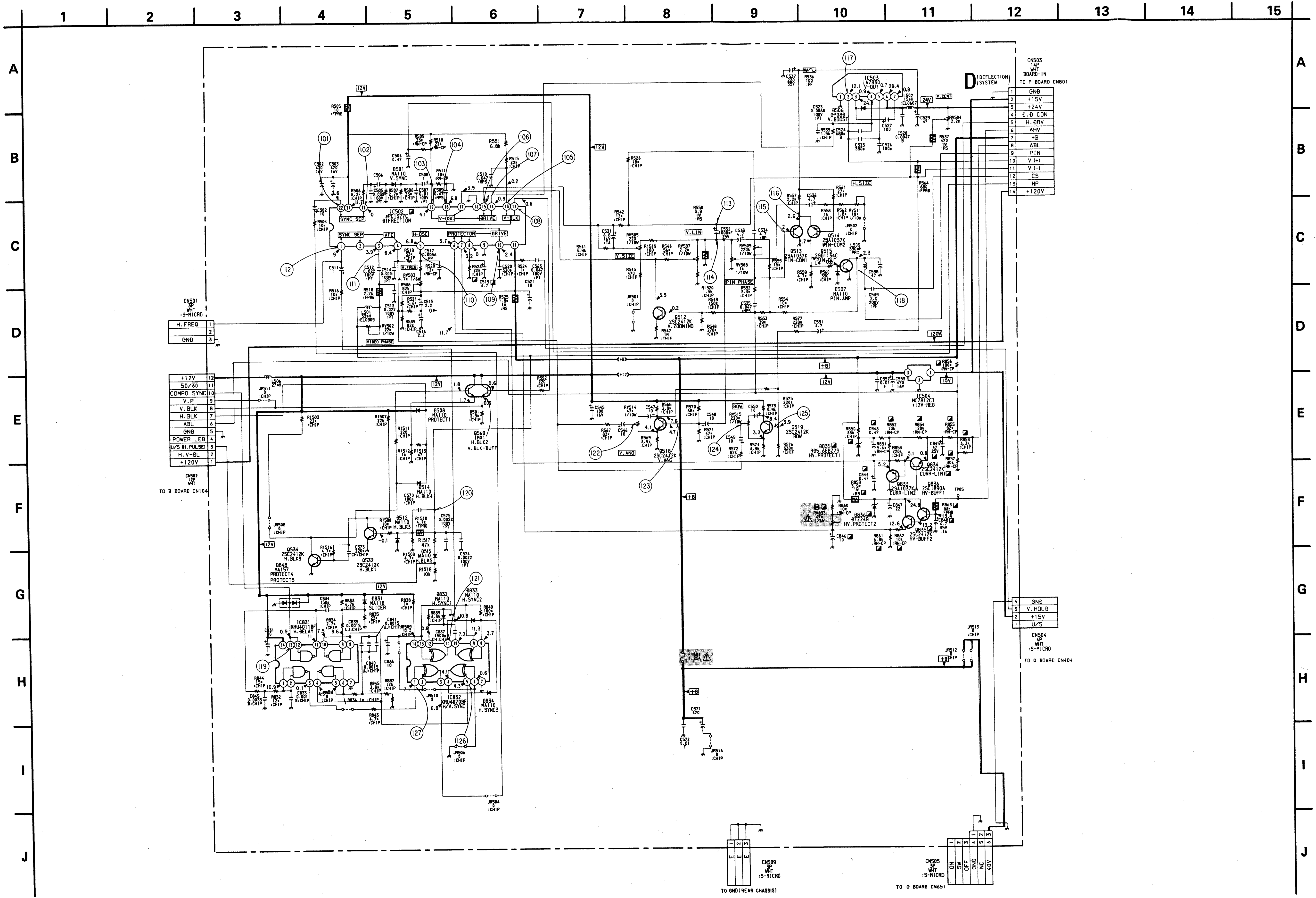
6
7
8
A
B
C
D
E
F
G
H
I
J
CN501 3P WHT :S-MICRO
H.FREQ
GND
+12V
50/60
COMPO SYNC
V.P
V.BLK
H.BLK
ABL
GND
POWER LED
U/S (H.PULSE)
H.V-DL
+120V
CN502 12P WHT
TO B BOARD CN104
IC502 µPC1377C DEFLECTION
SYNC SEP
AFC
H-OSC
PROTECTOR
DRIVE
V-OSC
BRIYE
V-BLK
VIDEO PHASE
V.LIN
V.SIZE
PIN PHASE
Q512 2SC2412K V.ZOOMING
Q508 MA110 PROTECT1
Q569 MX1 H.BLK2 V.BLK-BUFF
Q518 2SC2412K V.ANG
V.ANG
Q534 2SC2412K H.BLK9
Q532 2SC2412K H.BLK1
Q848 MA157 PROTECT4 PROTECT5
IC831 XRU4011BF H.DELAY
IC832 XRU4070BF H/V.SYNC
Q831 MA110 SLICER
Q832 MA110 H.SYNC1
Q833 MA110 H.SYNC2
Q834 MA110 H.SYNC3
F1401 1.25A
+B
12V
TO GND(REAR

D


D (DEFLECTION SYSTEM)
CN503 14P WHT BOARD-IN TO P BOARD CN801
GND
+15V
+24V
O.D CON
H.DRV
ΔHV
+B
ABL
PIN
V(+)
V(-)
CS
HP
+120V
CN501 3P WHT :S-MICRO
H.FREQ
GND
CN502 12P WHT TO B BOARD CN104
+12V
50/60
COMPO SYNC
V.P
V.BLK
H.BLK
ABL
GND
POWER LED
U/S (H.PULSE)
H.V-DL
+120V
CN504 4P WHT :S-MICRO TO Q BOARD CN404
GND
V.HOLD
+15V
U/S
CN509 3P WHT :S-MICRO TO GND(REAR CHASSIS)
CN505 6P WHT :S-MICRO TO G BOARD CN651
ON
SW
OFF
GND
NC
40V
IC502 μPC1377C DEFLECTION
SYNC SEP
AFC
H-OSC
PROTECTOR
DRIVE
V-OSC
V-BLK
IC503 LA7830 V-OUT
D506 GP08D V.BOOST
Q512 2SC2412K V.ZOOMING
Q513 2SA1037K PIN-COM1
Q514 2SA1037K PIN-COM2
Q515 2SD1154C PIN-OUT
D507 MA110 PIN.AMP
Q518 2SC2412K V.AMP
Q519 2SC2412K BOW
Q569 IMX1 H.BLK2 V.BLK-BUFF
D508 MA110 PROTECT1
D512 MA110 H.BLK3
D514 MA110 H.BLK4
D515 MA110 H.BLK5
Q532 2SC2412K H.BLK1
Q534 2SC2412K H.BLK6
D848 MA157 PROTECT4 PROTECT5
IC831 XRU4011BF H.DELAY
IC832 XRU4070BF H/V.SYNC
D831 MA110 SLICER
D832 MA110 H.SYNC1
D833 MA110 H.SYNC2
D834 MA110 H.SYNC3
IC504 MC7812CT +12V-REG
D835 RD5.6EB2 HV.PROTECT1
D836 DTZ6B HV.PROTECT2
Q833 2SA1037K CURR-LIM2
Q834 2SC2412K CURR-LIM1
Q835 2SC2412K HV-BUFF2
Q836 2SC1890A HV-BUFF1
L501 EL0909
L502 EL0607
L503 EL0909
L506 27μH
V.SIZE
V.LIN
H.SIZE
PIN PHASE
H.FREQ
VIDEO PHASE
V.ANG
BOW
12V
+B
15V
120V
24V
V.CENT
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
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A
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C
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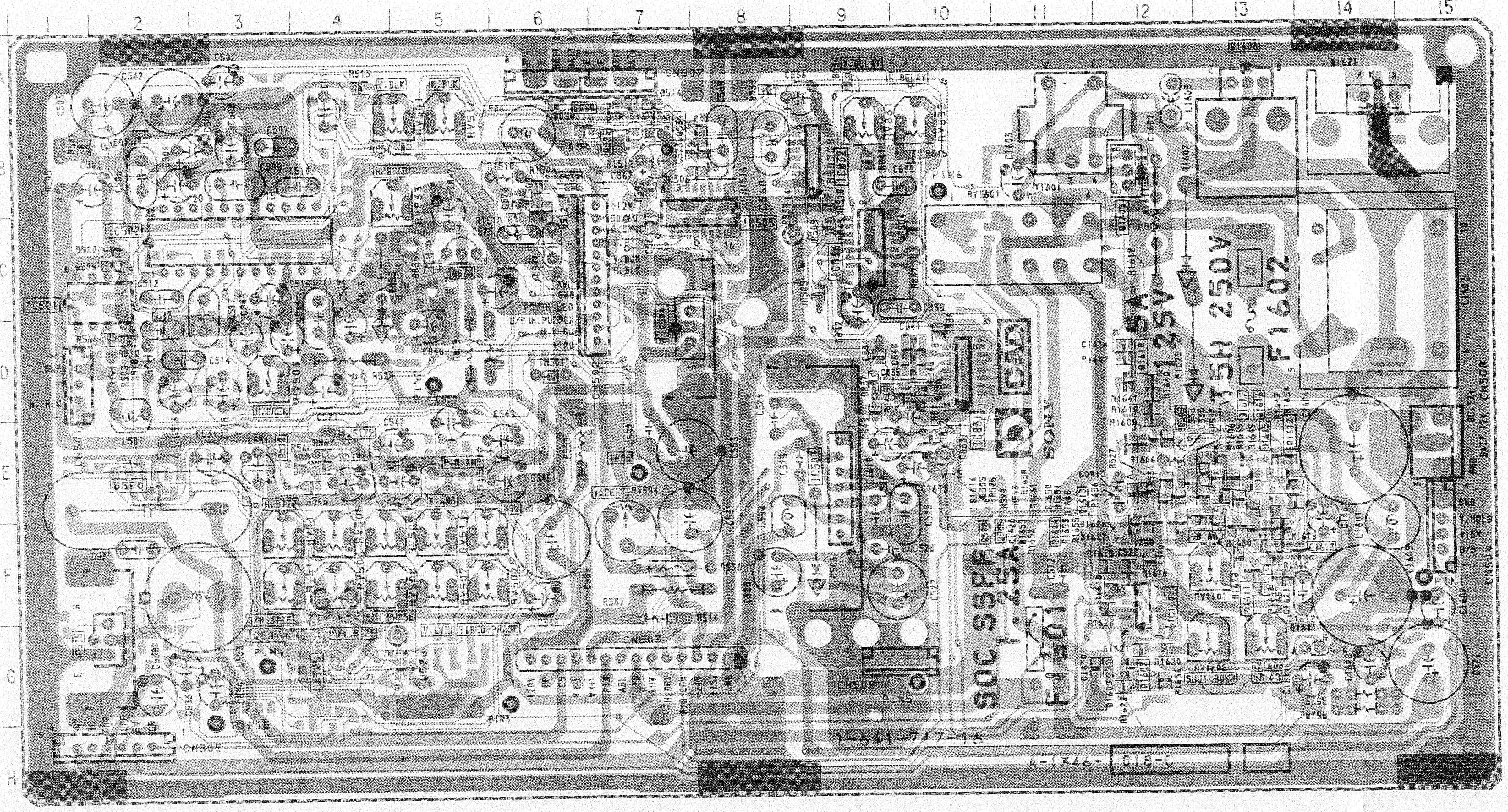
E
F
G
H
I
J

D [DEFLECTION SYSTEM]

– D Board – – Component Side –


1
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A
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E
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G
H
IC501
IC502
IC503
IC504
IC505
IC831
IC832
IC833
CN501
CN502
CN503
CN504
CN505
CN506
CN507
CN509
RY1601
F1601
F1602
T5H 250V
SOC SSFR 1.25A
125V 5A
SONY
CAD
V.BLK
H.BLK
H.DLAY
V.DELAY
H/B AR
H.FREQ
H.SIZE
V.SIZE
V.CENT
PIN AMP
PIN PHASE
V.LIN
VIDEO PHASE
SHUT DOWN
+B ADJ
POWER LED
PIN1
PIN3
PIN4
PIN5
PIN6
PIN15
1-641-717-16
A-1346-018-C

○ ▨ : Pattern from the side which enables seeing.

● ▨ : Pattern of the rear side.

• D

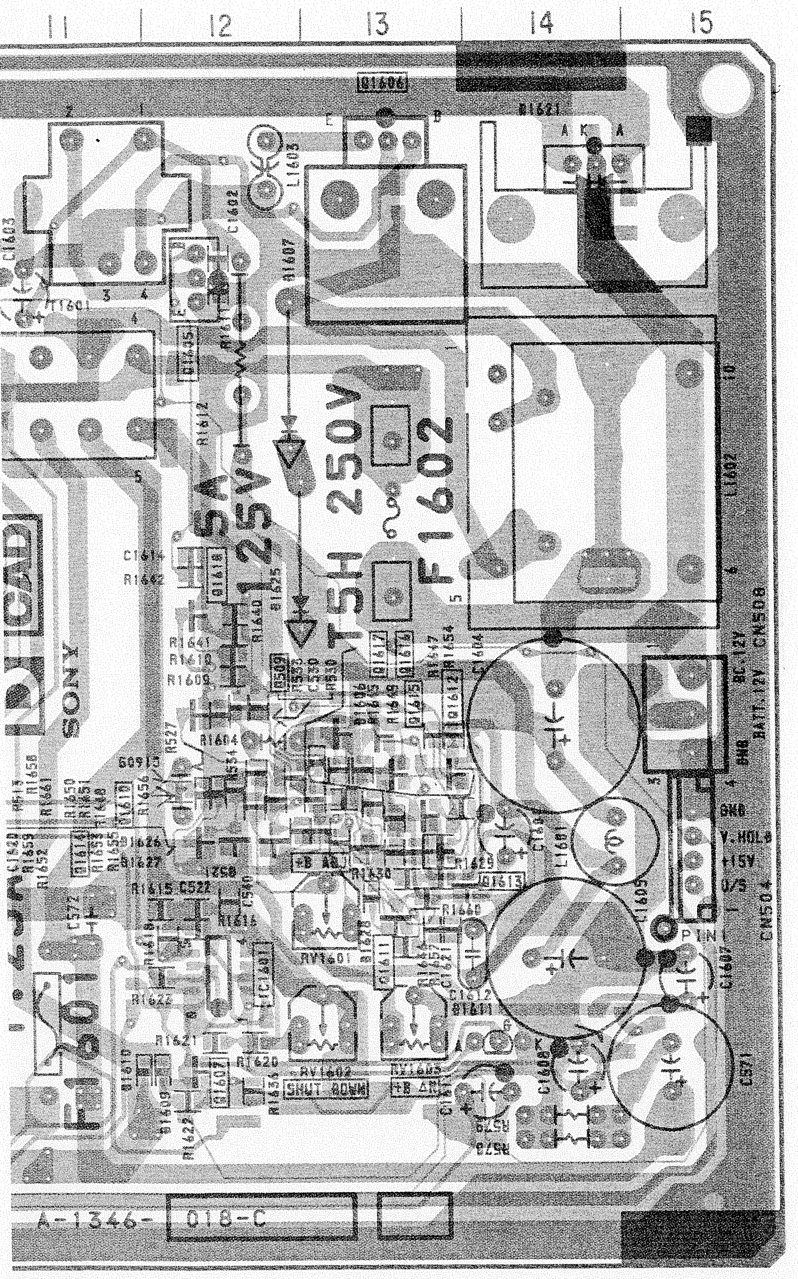
IC50
IC50
IC50
IC83
IC83

Q51
Q51
Q51
Q51
Q51
Q51
Q53
Q53
Q56
Q83
Q83
Q83
Q83

D50
D50
D50
D50
D51
D51
D51
D83
D83
D83
D83
D83
D83
D83

VA

RV
RV
RV
RV
RV
RV
RV
RV
RV
RV
RV


11
12
13
14
15
F1602
T5H 250V
5A 125V
CAD
SONY
CN508
CN504
PIN1
RV1601
RV1602
SHUT DOWN
+B ADJ
F1601
A-1346-018-C

- ▒ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.

• D BOARD

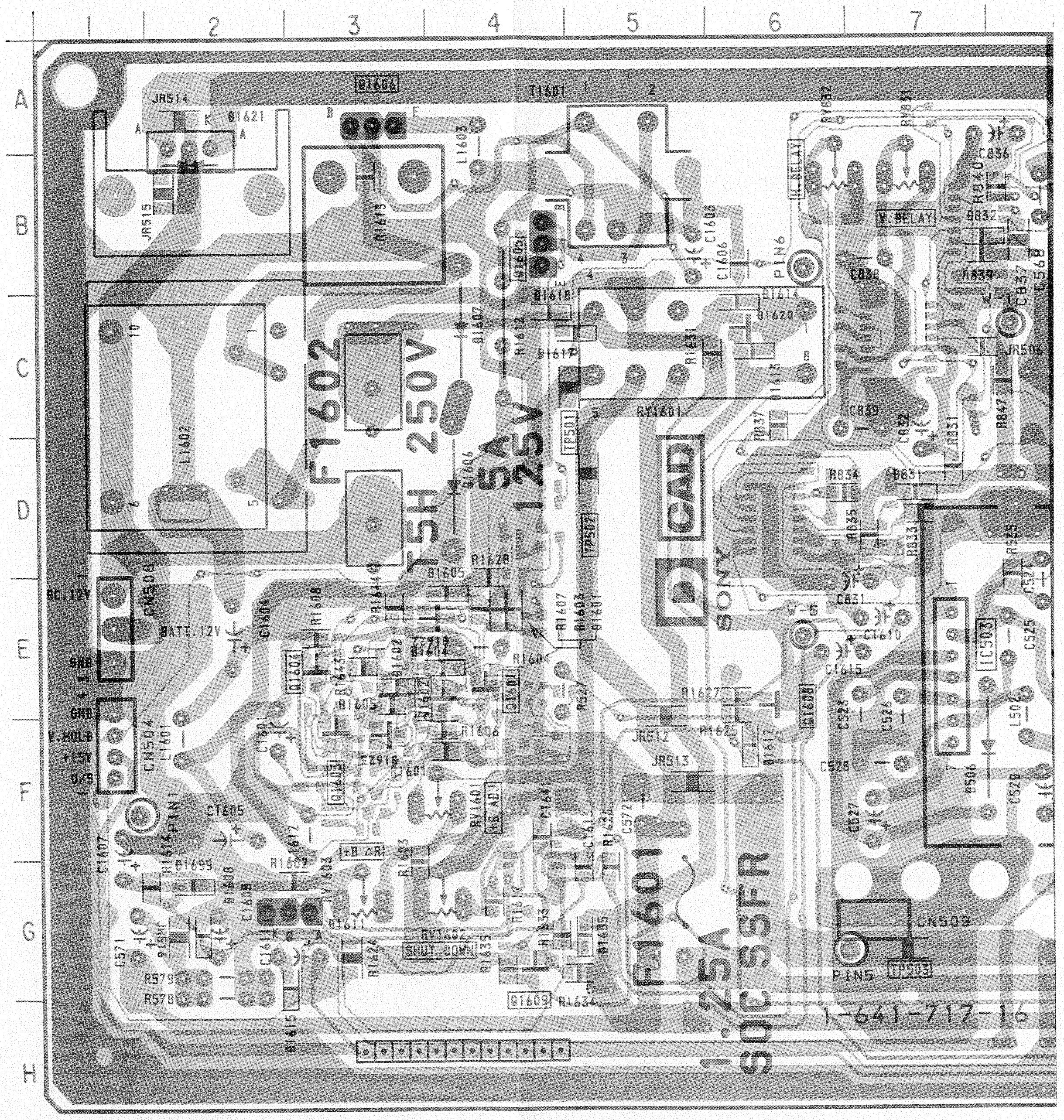
IC	(Conductor Side)	(Component Side)
IC502	C – 13	C – 3
IC503	E – 7	E – 9
IC504	C – 9	D – 7
IC831		D – 10
IC832		B – 9

TRANSISTOR	(Conductor Side)	(Component Side)
Q512		E – 4
Q513	G – 14	
Q514	G – 12	
Q515	G – 15	
Q518	E – 12	
Q519	E – 11	
Q532		B – 6
Q534		B – 8
Q569	B – 6	
Q833	C – 12	
Q834	C – 11	
Q835	C – 11	
Q836	C – 11	

DIODE	(Conductor Side)	(Component Side)
D501	B – 13	
D506	E – 7	F – 9
D507	G – 15	
D508		A – 6
D512		C – 6
D514		A – 7
D515	B – 10	
D831	D – 7	
D832	B – 7	
D833		A – 8
D834		A – 9
D835	C – 12	
D836		C – 5
D848		D – 10

VARIABLE RESISTOR	(Conductor Side)	(Component Side)
RV502	F – 11	F – 5
RV503	D – 13	D – 3
RV504	E – 9	F – 7
RV505	F – 12	F – 4
RV507	F – 11	F – 5
RV508	F – 12	F – 4
RV509	F – 12	F – 4
RV511	F – 13	F – 3
RV514	F – 11	F – 5
RV515	F – 11	F – 5
RV833	B – 12	B – 4

– D Board – – Conductor Side –


1
2
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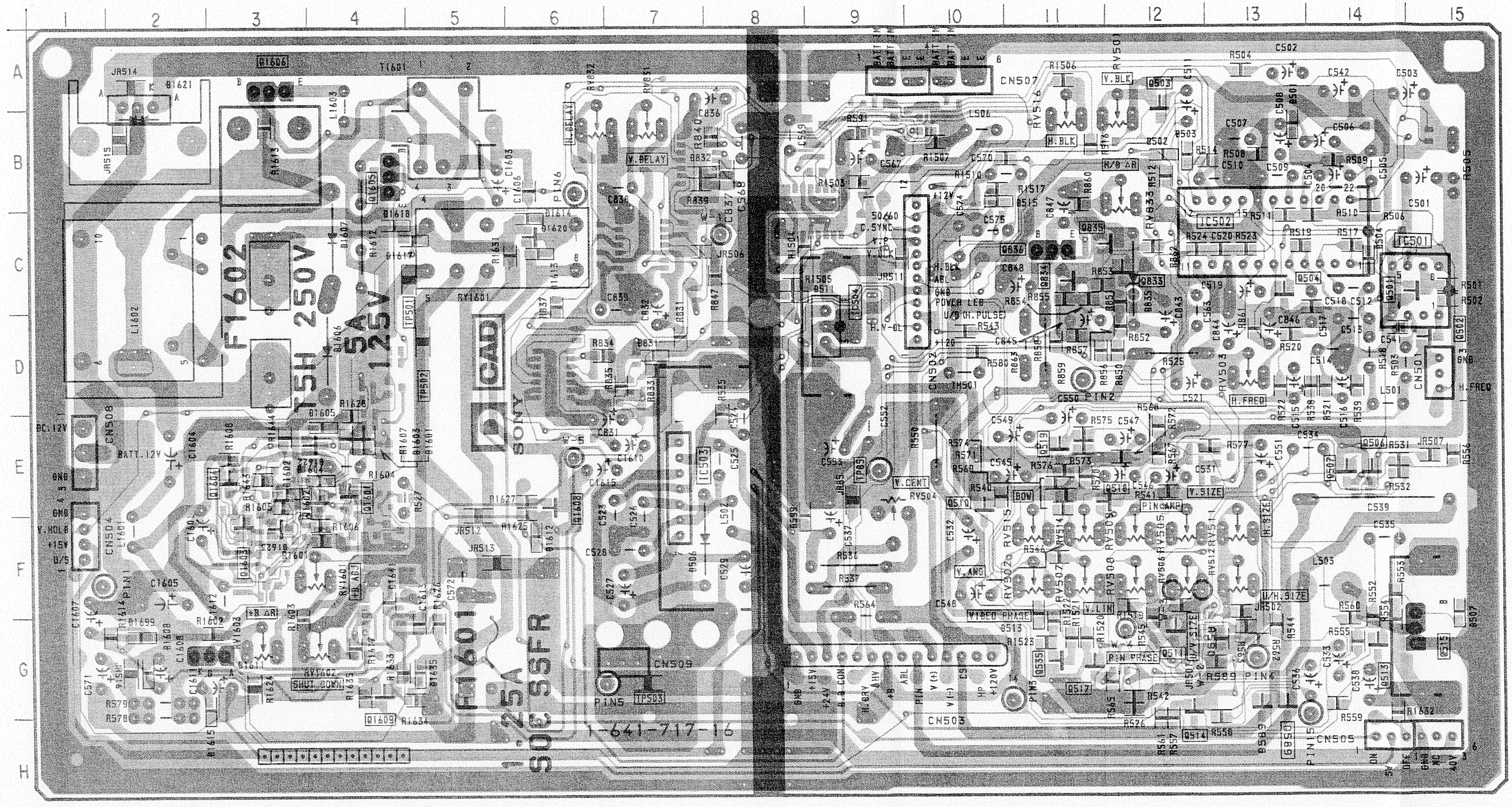
5
6
7
A
B
C
D
E
F
G
H
T1601
F1602
T5H 250V
5A 125V
CAD
SONY
H.DELAY
V.DELAY
CN508
BATT.12V
BC.12V
CN504
V.HOLD
+15V
PIN1
PIN5
PIN6
IC503
CN509
TP503
RV1601
RV1602
SHUT DOWN
+B ADJ
F1601
2.5A 50C SSFR
1-641-717-16

– D Board – – Conductor Side –


1
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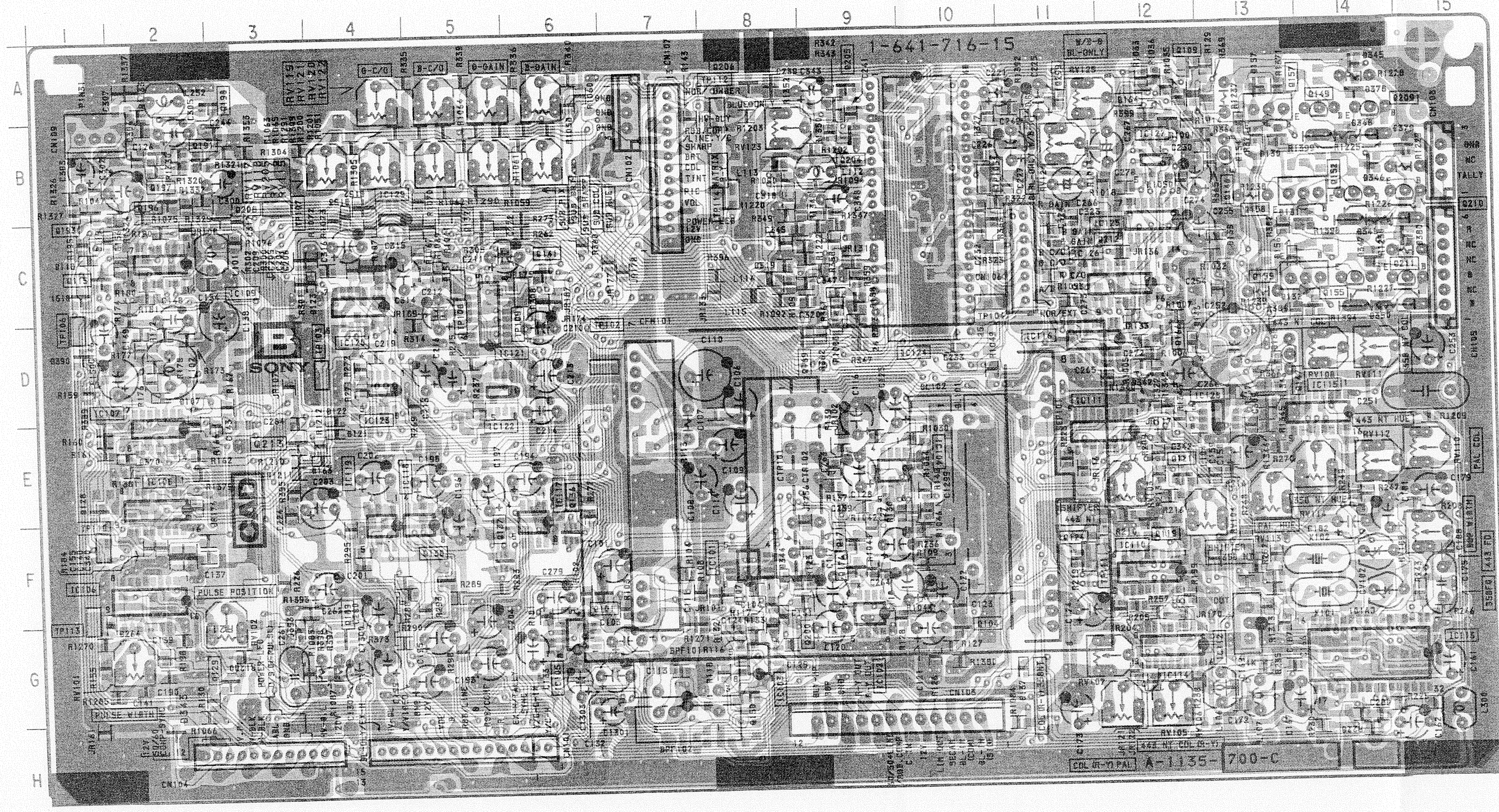
10
11
12
13
14
15
A
B
C
D
E
F
G
H
F1602
T5H 250V
5A 125V
F1601
T2.5A
250C SSFR
CAD
SONY
1-641-717-16
CN507
CN508
CN504
CN502
CN509
CN503
CN505
CN501
IC501
IC502
IC503
T1601
RY1601
L1602
V.BLK
H.BLK
H/D ΔR
H.DELAY
V.DELAY
V.CENT
Y.SIZE
V.SIZE
PIN AMP
V.LIN
VIDEO PHASE
PIN PHASE
H.FREQ
U/H.SIZE
Y.ANG
BOW
SHUT DOWN
+B ADJ
BATT.12V
GND
V.HOLD
+15V
U/S
PIN1
PIN2
PIN4
PIN5
PIN6
PIN15

○ ▨ : Pattern from the side which enables seeing.

● ▨ : Pattern of the rear side.

B [SIGNAL PROCESS]

– B Board – – Component Side –



● ░ : Pattern from the side which enables seeing.

● ▨ : Pattern of the rear side.

● **B BOARD**

IC	(Conductor Side)	(Component Side)
IC101		F – 8
IC102		G – 9
IC103		G – 8
IC104		E – 9
IC107		E – 2
IC109		C – 2
IC111		E – 11
IC112	G – 13	
IC113		G – 14
IC117		F – 6
IC118		F – 5
IC119		F – 4
IC123		D – 4
IC124	C – 7	B – 7
IC129		B – 4

TRANSISTOR	(Conductor Side)	(Component Side)
Q101		F – 6
Q102	G – 10	
Q104		G – 10
Q105	G – 8	
Q107	E – 7	
Q108	E – 7	
Q112	D – 4	
Q117	F – 4	
Q120	F – 4	
Q125	H – 2	
Q127	H – 4	
Q128	H – 3	
Q130	G – 4	
Q131	G – 2	
Q136		F – 6
Q137		F – 5
Q138		F – 5
Q140	E – 11	
Q144	A – 7	
Q146	B – 3	
Q147	D – 3	
Q148	A – 2	
Q149	B – 2	
Q150		G – 8
Q151	B – 2	
Q152	B – 2	
Q153	C – 7	
Q154	C – 2	
Q155	C – 2	
Q156	F – 12	
Q157	B – 3	
Q158	B – 3	
Q159	C – 3	
Q160	A – 4	
Q161	C – 3	
Q165	D – 4	
Q166		D – 12
Q167	C – 5	

Q169
Q171
Q173
Q174
Q175
Q176
Q189
Q191
Q192
Q193
Q194
Q195
Q196
Q197
Q198
Q199
Q200
Q204
Q205
Q206
Q208
Q209
Q210
Q211
Q213
Q299

D103
D104
D106
D107
D108
D118
D120
D121
D123
D127
D129
D130
D131
D132
D133
D134
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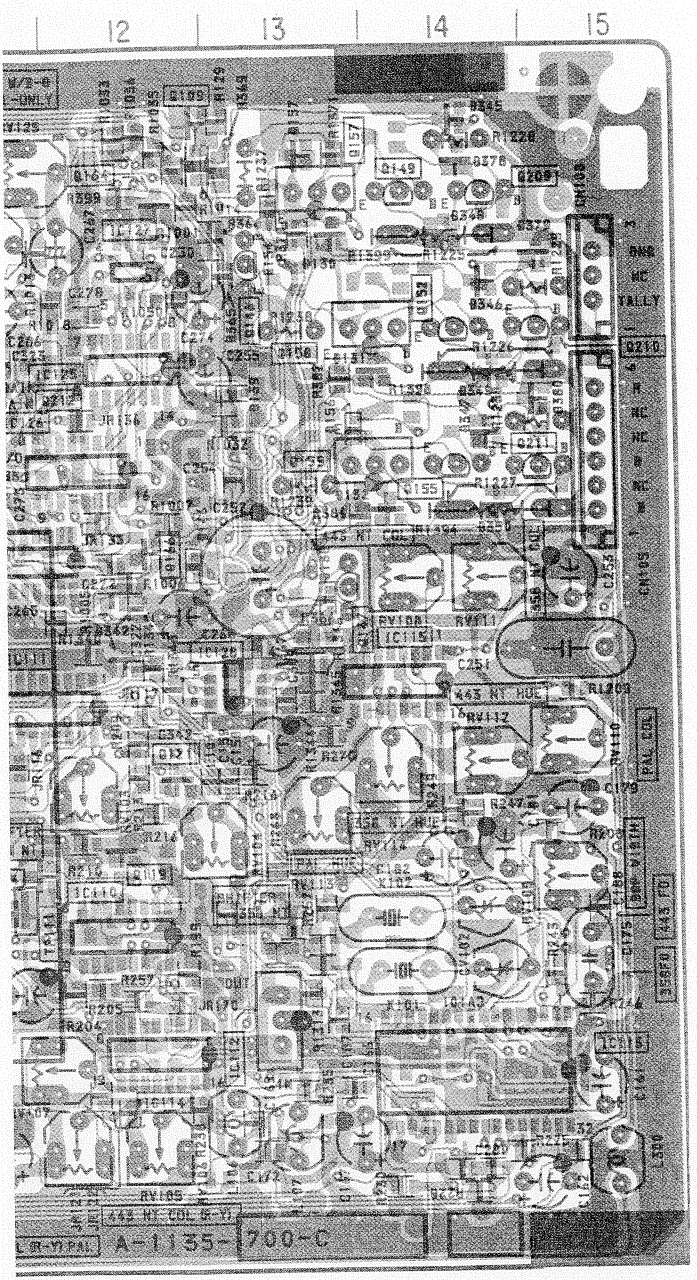
D149
D150
D151
D152
D153


12
13
14
15
A-1135-700-C
443 NT HUE
PAL COL
TALLY
358 NT COL
RV105

- ░ : Pattern from the side which enables seeing.
- ░ : Pattern of the rear side.

• B BOARD

IC

	(Conductor Side)	(Component Side)
IC101		F – 8
IC102		G – 9
IC103		G – 8
IC104		E – 9
IC107		E – 2
IC109		C – 2
IC111		E – 11
IC112	G – 13	
IC113		G – 14
IC117		F – 6
IC118		F – 5
IC119		F – 4
IC123		D – 4
IC124	C – 7	B – 7
IC129		B – 4

TRANSISTOR

	(Conductor Side)	(Component Side)
Q101		F – 6
Q102	G – 10	
Q104		G – 10
Q105	G – 8	
Q107	E – 7	
Q108	E – 7	
Q112	D – 4	
Q117	F – 4	
Q120	F – 4	
Q125	H – 2	
Q127	H – 4	
Q128	H – 3	
Q130	G – 4	
Q131	G – 2	
Q136		F – 6
Q137		F – 5
Q138		F – 5
Q140	E – 11	
Q144	A – 7	
Q146	B – 3	
Q147	D – 3	
Q148	A – 2	
Q149	B – 2	
Q150		G – 8
Q151	B – 2	
Q152	B – 2	
Q153	C – 7	
Q154	C – 2	
Q155	C – 2	
Q156	F – 12	
Q157	B – 3	
Q158	B – 3	
Q159	C – 3	
Q160	A – 4	
Q161	C – 3	
Q165	D – 4	
Q166		D – 12
Q167	C – 5	
Q169		D – 9
Q171		F – 9
Q173	D – 4	
Q174	C – 4	
Q175	C – 4	
Q176		F – 9
Q189		G – 4
Q191		B – 2
Q192	B – 14	
Q193		B – 1
Q194	B – 15	
Q195	B – 14	
Q196		B – 2
Q197		B – 2
Q198		A – 3
Q199	A – 15	
Q200		F – 8
Q204		B – 9
Q205		A – 9
Q206		A – 8
Q208		B – 3
Q209		A – 11
Q210	B – 2	
Q211	C – 2	
Q213		E – 3
Q299		A – 11

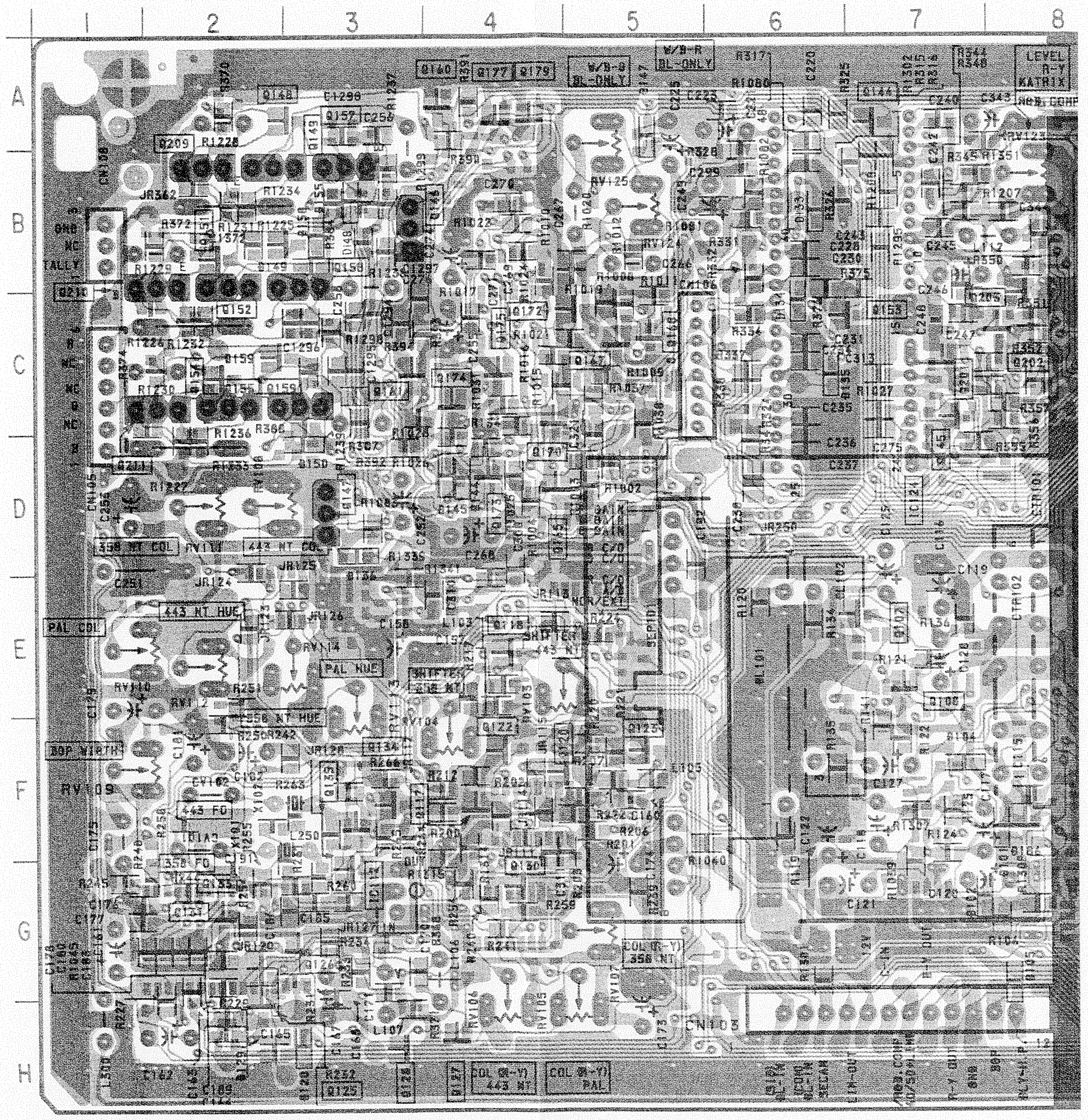
DIODE

	(Conductor Side)	(Component Side)
D103		G – 8
D104	G – 8	
D106	D – 14	
D107		D – 2
D108	E – 14	
D118		C – 1
D120	H – 3	
D121		E – 4
D123		C – 4
D127	F – 13	
D129	H – 2	
D130		B – 13
D131		C – 14
D132		D – 14
D133	B – 6	
D134	C – 6	
D135	C – 6	
D136	D – 3	
D137		G – 11
D138		B – 13
D141		B – 5
D144	D – 4	
D145	D – 4	
D146		D – 12
D148	B – 3	
D149	B – 2	
D150	D – 3	
D151		C – 5
D152		B – 4
D153		B – 4
D154		B – 13
D155	B – 3	
D156		C – 13
D157		A – 13
D158	B – 3	
D159	C – 2	
D163		E – 4
D180	E – 15	
D285	E – 11	
D341	B – 14	
D343		H – 2
D344		F – 8
D345		A – 14
D346		B – 14
D347		C – 14
D348		B – 14
D349		C – 14
D350		D – 14

VARIABLE RESISTOR

	(Conductor Side)	(Component Side)
RV105	H – 5	H – 12
RV109	F – 1	F – 15
RV110	E – 1	E – 15
RV113	E – 3	F – 13
RV115	B – 10	B – 6
RV118	B – 12	B – 4
RV119	A – 12	A – 4
RV120	A – 11	A – 5
RV121	A – 11	A – 5
RV122	A – 10	A – 6
RV205	B – 11	B – 5

– B Board – – Conductor Side –


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
LEVEL R-Y MATRIX
W/B-R BL-ONLY
W/B-B BL-ONLY
TALLY
PAL COL
443 NT HUE
PAL HUE
358 NT COL
BOP WIDTH
RV109
CN103
COL (R-Y) 443 NT
COL (R-Y) PAL

B – 13

C – 13
A – 13

E – 4

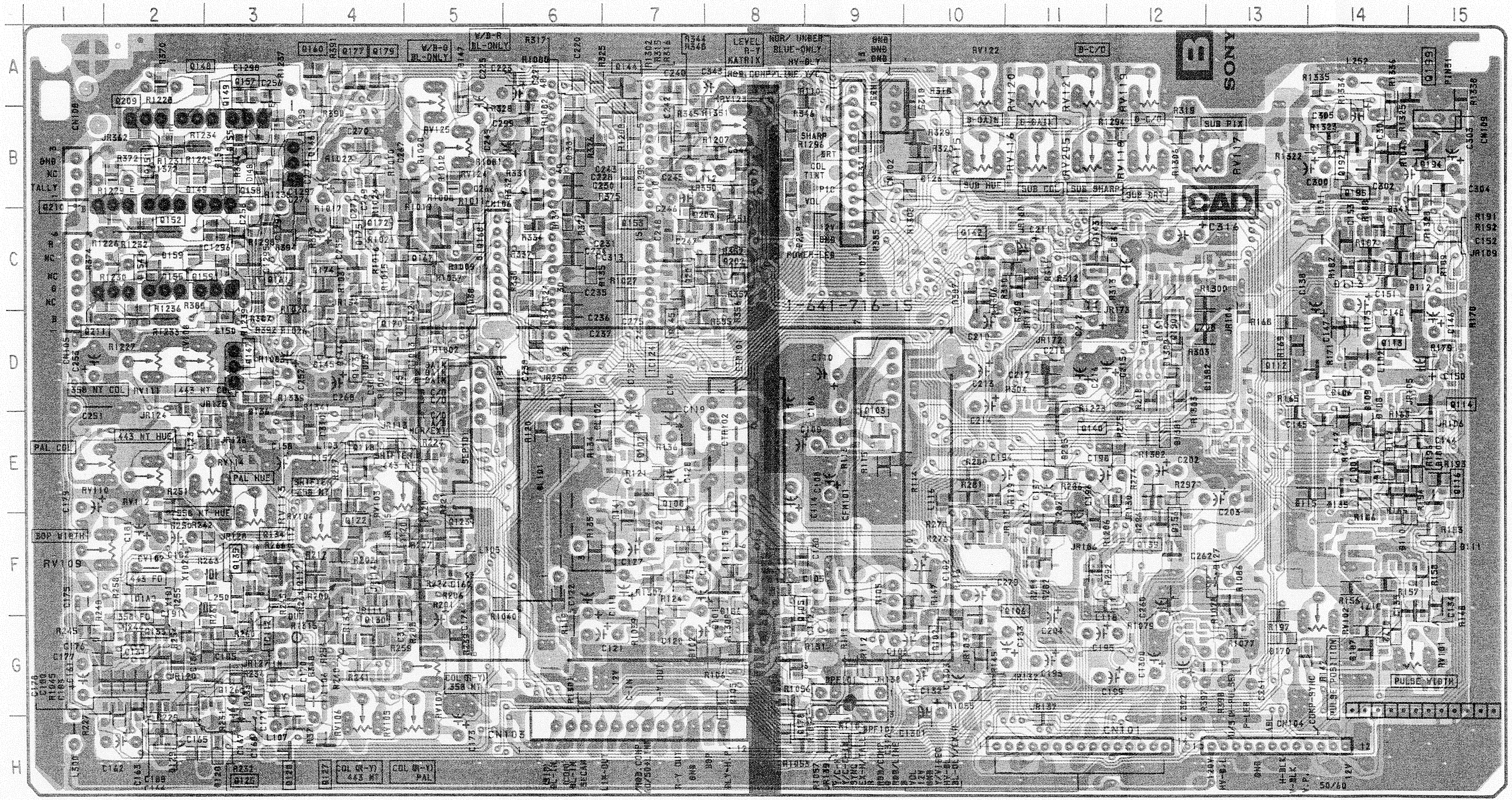
H – 2
F – 8
A – 14
B – 14
C – 14
B – 14
C – 14
D – 14

SISTOR

(Component Side)

H – 12
F – 15
E – 15
F – 13
B – 6
B – 4
A – 4
A – 5
A – 5
A – 6
B – 5

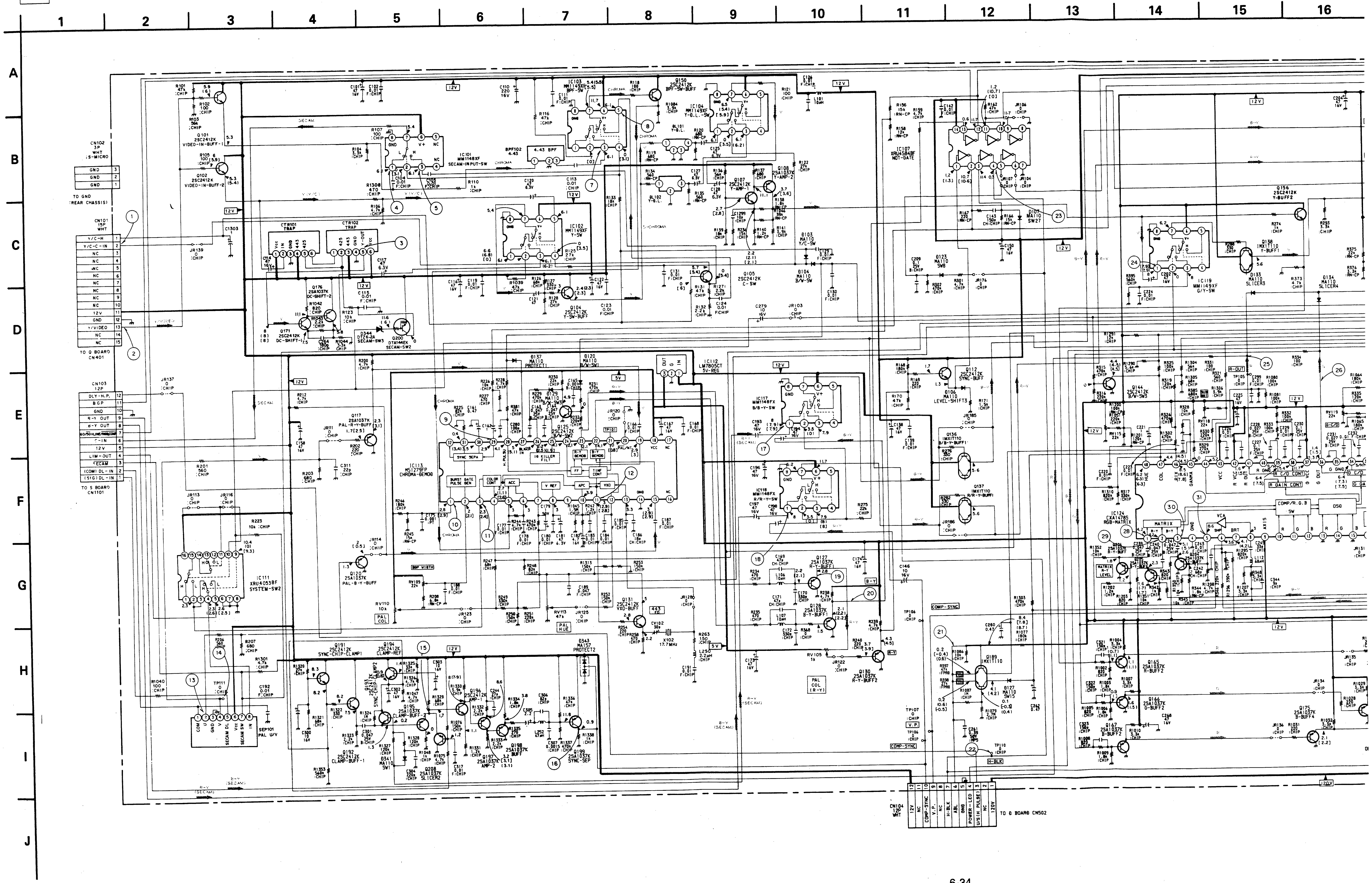
– B Board – – Conductor Side –

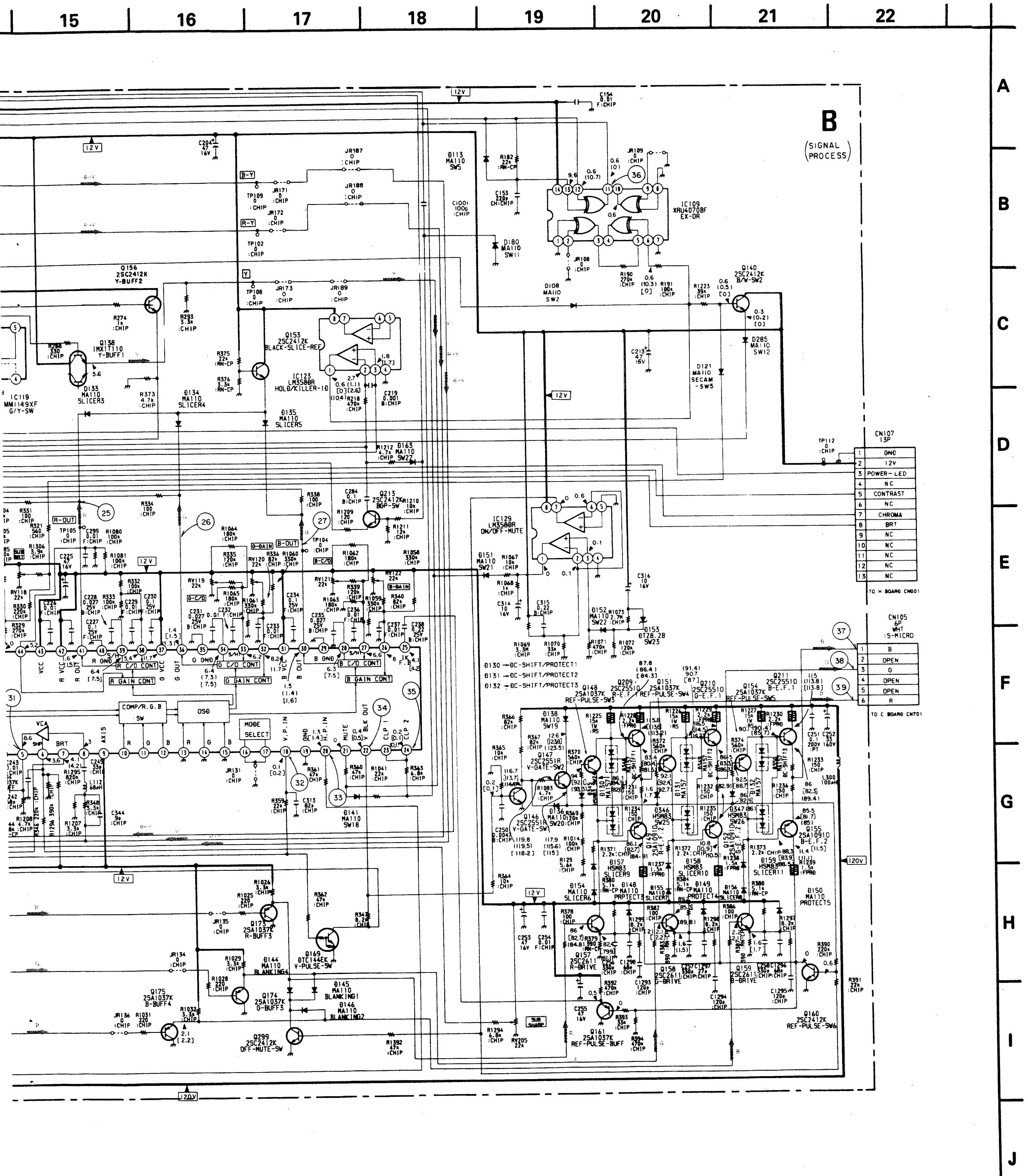

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
B
SONY
CAD
1-641-716-15
CN101
CN103
CN104
CN105
CN106
CN107
CN108
CN109
PAL COL
PAL HUE
443 NT HUE
358 NT COL
443 NT COL
SUB PIX
SUB HUE
SUB COL
SUB SHARP
SUB BRT
B-GAIN
G-GAIN
B-C/D
PULSE WIDTH
PULSE POSITION
TALLY
GND
NC
SHARP
BRT
COL
TINT
VOL
POWER-LED
LEVEL R-Y MATRIX
NOR/ UNDER BLUE-ONLY HV-DLY
W/B-R BL-ONLY
W/B-G BL-ONLY
COL (R-Y) 443 NT
COL (B-Y) PAL
COL (B-Y) 358 NT
SHIFTER
50/60

▨ : Pattern from the side which enables seeing.

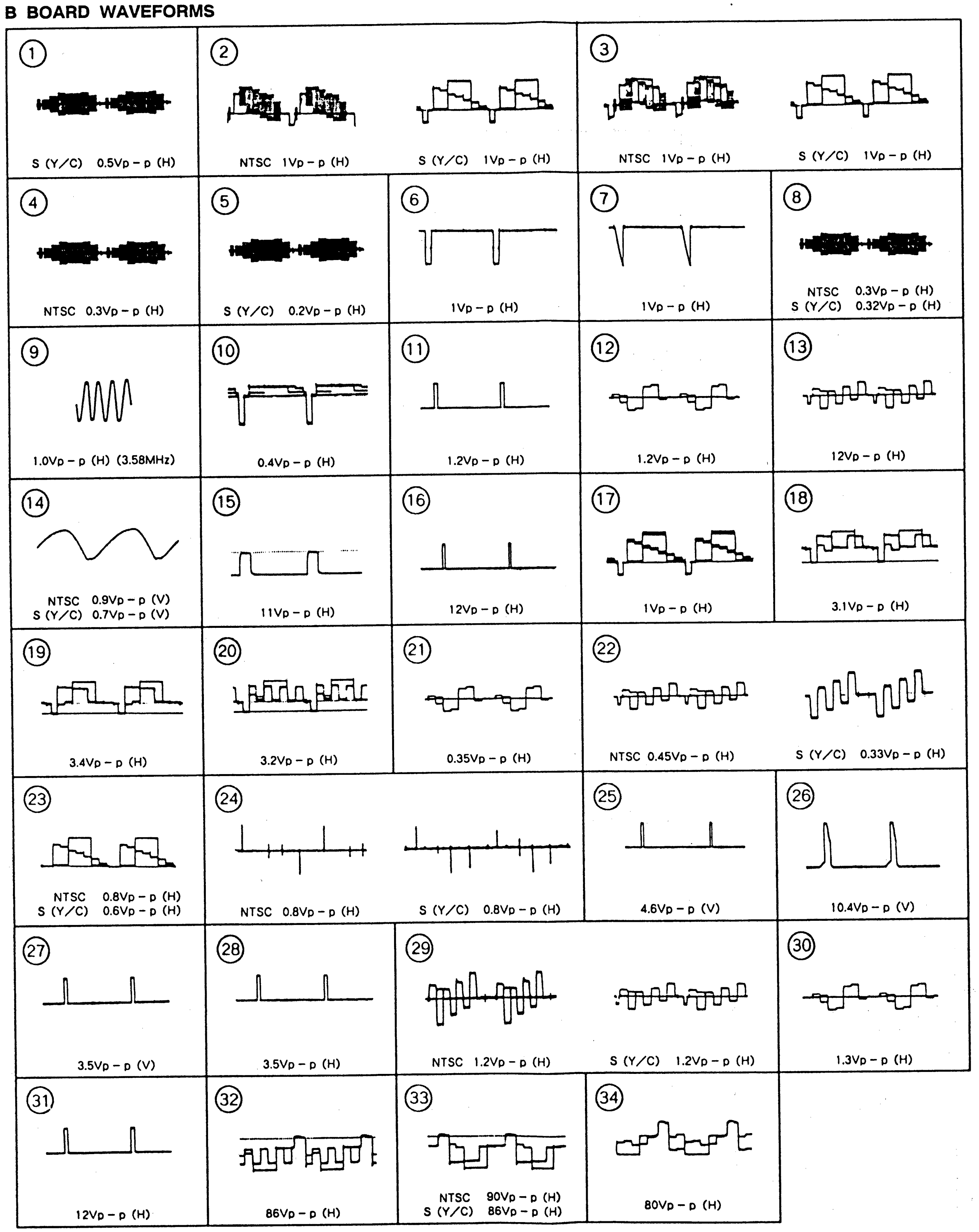
● ▨ : Pattern of the rear side.

B

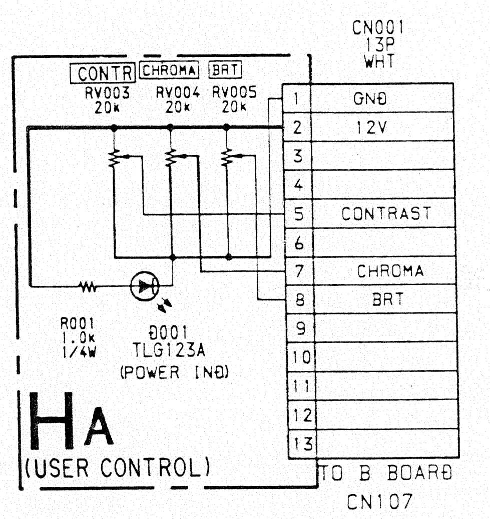

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
CN102 3P WHT :S-MICRO
GND
TO GND (REAR CHASSIS)
CN101 15P WHT
Y/C-H
Y/C-C-IN
NC
12V
GND
Y/VIDEO
TO Q BOARD CN401
CN103 12P
DLY-H.P.
BGP
GND
R-Y OUT
B-Y OUT
C-IN
12V
LIM-OUT
SECAM
TO S BOARD CN1101
Q101 2SC2412K VIDEO-IN-BUFF-1
Q102 2SC2412K VIDEO-IN-BUFF-2
IC101 MM1148XF SECAM-INPUT-SW
BPF102 4.43
IC103 MM1149XF BPF-SW
Q150 2SC2412K BPF-SW-BUFF
IC104 MM1149XF Y-B.L.-SW
CTR101 TRAP
CTR102 TRAP
IC102 MM1149XF Y-SW
Q107 2SC2412K Y-AMP-1
Q108 2SA1037K Y-AMP-2
Q104 2SC2412K Y-SW-BUFF
Q105 2SC2412K C-SW
D103 MA110 Y/C-SW
D104 MA110 B/Y-SW
Q176 2SA1037K DC-SHIFT-2
Q171 2SC2412K DC-SHIFT-1
D344 DTZ6-2A SECAM-SW3
Q200 DTA144EK SECAM-SW2
IC107 XRU4584BF NOT-GATE
D101 MA110 SW27
D123 MA110 SW8
Q156 2SC2412K Y-BUFF2
IC119 MM1149XF G/Y-SW
Q138 IMX1110 Y-BUFF1
D133 MA110 SLICER3
D134 MA110 SLICER4
D137 MA110 PROTECT1
D120 MA110 B/Y-SW1
IC112 LM7805CT 5V-REG
Q117 2SA1037K PAL-R-Y-BUFF
IC113 M51279FP CHROMA-DEMOD
SYNC SEPA
BURST GATE PULSE GEN
COLOR CONT
ACC
V REF
APC
VXO
10 KILLER FILT
DEMOD
TINT CONT
Q125 2SC2412K B/Y-SW2
IC117 MM1148FX B/B-Y-SW
IC118 MM1148FX R/R-Y-SW
Q112 2SC2412K SYNC-BUFF
D106 MA110 LEVEL-SHIFT3
Q136 IMX1110 B/B-Y-BUFF
Q137 IMX1110 R/R-Y-BUFF
Q144 2SC2412K B/Y-SW3
IC124 CXA1478S RGB-MATRIX
MATRIX
VCA
BRT
COMP/R.G.B SW
OSD
R-OUT
R GAIN CONT
R C/O CONT
MATRIX R-Y LEVEL
IC111 XRU4053BF SYSTEM-SW2
Q120 2SA1037K PAL-B-Y-BUFF
RV110 10k PAL COL
RV113 47k PAL HUE
Q131 2SC2412K VXO-BUFF
X102 17.7MHz
Q127 2SA1037K R-Y-BUFF1
Q128 2SA1037K B-Y-BUFF1
Q130 2SA1037K R-Y-BUFF2
RV105 PAL COL (R-Y)
SEP101 PAL U/V
Q191 2SC2412K SYNC-CHIP-CLAMP1
Q194 2SC2412K CLAMP-REF
Q192 2SC2412K CLAMP-BUFF-1
Q195 2SA1037K CLAMP-BUFF-2
D341 MA110 SW1
Q208 2SA1037K SLICER2
Q196 2SC2412K AMP-1
Q197 2SA1037K AMP-2
Q198 2SA1037K BUFF
Q199 2SA1037K SYNC-SEP
D343 MA157 PROTECT2
COMP-SYNC
Q189 IMX1110
D127 MA110 SW15
Q165 2SA1037K R-BUFF2
Q166 2SA1037K G-BUFF2
Q167 2SA1037K B-BUFF2
Q175 2SA1037K B-BUFF4
CN104 12P WHT
12V
COMP-SYNC
V.P.
H-BLK
GND
POWER-LED
U/SIH PULSE
120V
TO G BOARD CN502

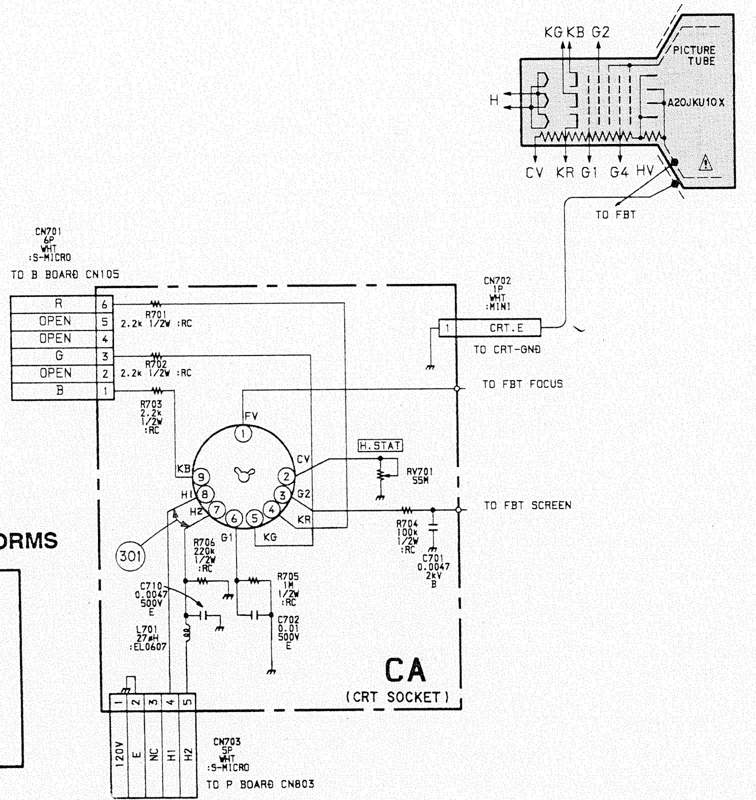

15
16
17
18
19
20
21
22
A
B
C
D
E
F
G
H
I
J
B
(SIGNAL PROCESS)
12V
120V
IC109 XRU4070BF EX-OR
IC123 LM358BR HOLD/KILLER-10
IC129 LM358BR ON/OFF-MUTE
IC119 MM1149XF G/Y-SW
Q156 2SC2412K Y-BUFF2
Q138 IMX1T110 Y-BUFF1
Q153 2SC2412K BLACK-SLICE-REF
Q140 2SC2412K B/W-SW2
Q213 2SC2412K BGP-SW
Q173 2SA1037K R-BUFF3
Q174 2SA1037K G-BUFF3
Q175 2SA1037K B-BUFF4
Q169 DTC144EK V-PULSE-SW
Q299 2SC2412K OFF-MUTE-SW
Q160 2SC2412K REF-PULSE-SW6
Q161 2SA1037K REF-PULSE-BUFF
Q157 2SC2611 R-DRIVE
Q158 2SC2611 G-DRIVE
Q159 2SC2611 B-DRIVE
Q155 2SA1091 B-E.F.2
CN107 13P
GND
12V
POWER-LED
NC
CONTRAST
NC
CHROMA
BRT
NC
NC
NC
NC
NC
TO H BOARD CN001
CN105 6P WHT :S-MICRO
B
OPEN
G
OPEN
OPEN
R
TO C BOARD CN701
Q130 →DC-SHIFT/PROTECT1
Q131 →DC-SHIFT/PROTECT2
Q132 →DC-SHIFT/PROTECT3
COMP/R.G.B SW
OSD
MODE SELECT
R GAIN CONT
G GAIN CONT
B GAIN CONT
R C/O CONT
G C/O CONT
B C/O CONT
B-OUT
R-OUT
G-OUT
SUB SHARP

B BOARD WAVEFORMS

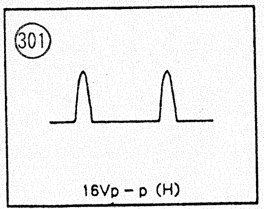


HA **CA**


CN001
13P
WHT
CONTR
CHROMA
BRT
RV003 20k
RV004 20k
RV005 20k
1 GND
2 12V
3
4
5 CONTRAST
6
7 CHROMA
8 BRT
9
10
11
12
13
R001 1.0k 1/4W
D001 TLG123A (POWER IND)
HA
(USER CONTROL)
TO B BOARD CN107

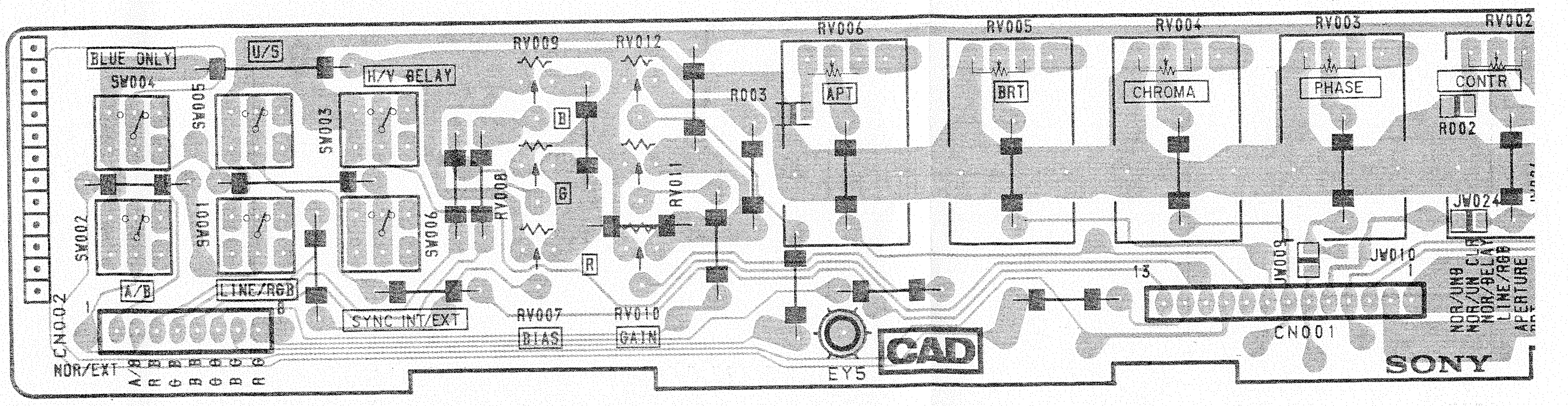

KG KB G2
PICTURE TUBE
H
A20JKU10X
CV KR G1 G4 HV
TO FBT
CN701 6P WHT :S-MICRO
TO B BOARD CN105
R
OPEN
OPEN
G
OPEN
B
R701 2.2k 1/2W :RC
R702 2.2k 1/2W :RC
R703 2.2k 1/2W :RC
CN702 1P WHT :MINI
CRT.E
TO CRT-GND
TO FBT FOCUS
FV
KB
H1
H2
CV
G2
KR
G1
KG
H.STAT
RV701 55M
TO FBT SCREEN
R704 100k 1/2W :RC
C701 0.0047 2kV B
301
R706 220k 1/2W :RC
R705 1M 1/2W :RC
C710 0.0047 500V E
C702 0.01 500V E
L701 27μH :EL0607
CA
(CRT SOCKET)
120V
E
NC
H1
H2
CN703 5P WHT :S-MICRO
TO P BOARD CN803

• CA BOARD WAVEFORMS

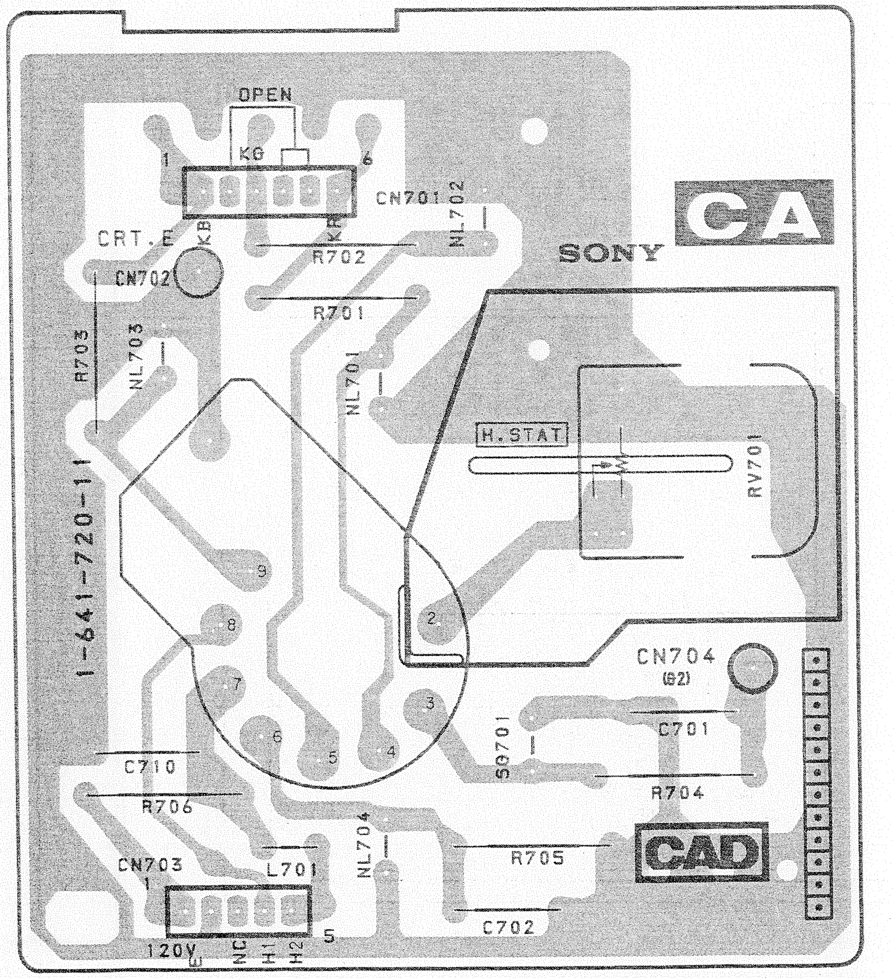


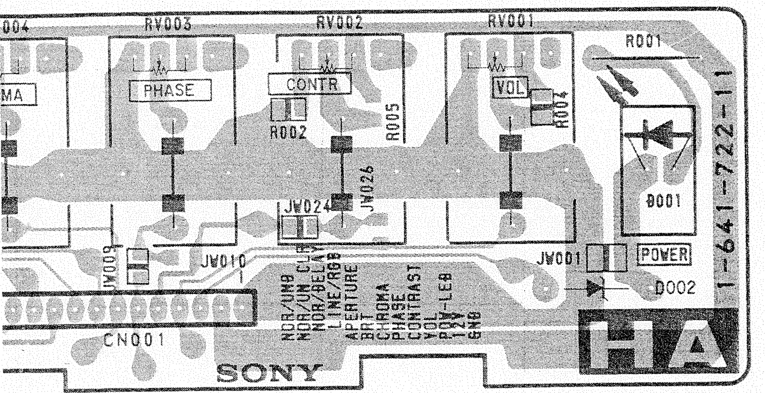
HA [USER CONTROL] **CA** [CRT SOCKET]

— HA Board —


BLUE ONLY
U/S
H/V DELAY
RV009
RV012
RV006
RV005
RV004
RV003
RV002
SW004
SW005
SW003
RV003
APT
BRT
CHROMA
PHASE
CONTR
R002
SW002
SW001
SW006
RV008
RV011
JW024
JW009
JW010
A/B
LINE/RGB
SYNC INT/EXT
RV007 BIAS
RV010 GAIN
CN002
NOR/EXT
EY5
CAD
CN001
13
SONY
NOR/UM9
NOR/UN CUR
NOR/DELAY
LINE/RGB
APERTURE

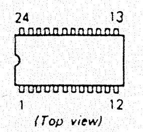
— CA Board —


OPEN
KG
1
6
CN701
NL702
CRT.E
KB
KR
CN702
R702
R701
CA
SONY
R703
NL703
NL701
H.STAT
RV701
1-641-720-11
9
8
7
6
5
4
3
2
CN704 (G2)
C701
C710
SG701
R704
R706
NL704
CN703
L701
R705
CAD
C702
120V
E
NC
H1
H2
5

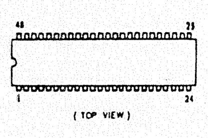

004
RV003
RV002
RV001
R001
MA
PHASE
CONTR
VOL
R002
R005
R004
JW026
JW024
B001
JW009
JW010
JW001
POWER
D002
1-641-722-11
NOR/UMB
NOR/UM CLR
NOR/DELAY
LINE/RGB
APERTURE
BRT
CHROMA
PHASE
CONTRAST
VOL
POW-LEB
12V
GND
CN001
SONY
HA

6-6. SEMICONDUCTORS

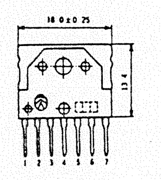
CXA1214P


24
13
1
12
(Top view)

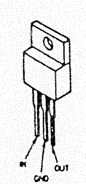
CXA1478S



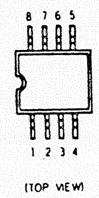
LA7830



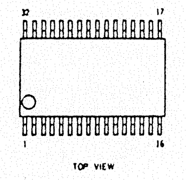
LM7805CT
LM7812CT
MC7812CT



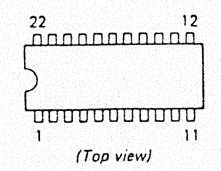
LM358D
LM358DR
MM1148XFF
MM1149XF
NJM2245M


8 7 6 5
1 2 3 4
(TOP VIEW)

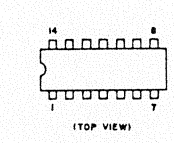
M51279FP



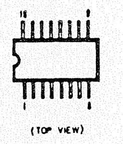
µPC1377C


22
12
1
11
(Top view)

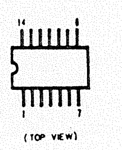
XRU4011BF
XRU4070BF


14
8
1
7
(TOP VIEW)

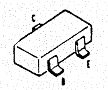
XRU4052BF


16
9
1
8
(TOP VIEW)

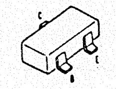
XRU4584BF


14
8
1
7
(TOP VIEW)

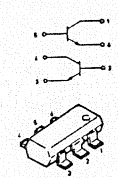
DTC114EK



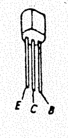
2SA1037K
2SA1162-G
2SC2412K



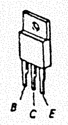
IMX1
IMX1T110



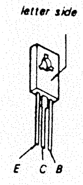
2SA1091-0
2SA10910
2SC1890A
2SC2551-0
2SC25510
2SC2551R



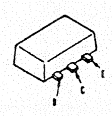
2SD1134



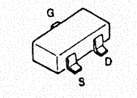
2SC2611


letter side
E C B

2SC3736



2SK94



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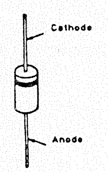
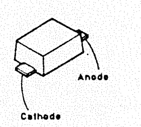
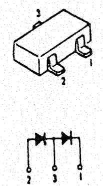
1SS83
1SS83TD


Cathode
Anode

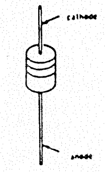
MA110-TX


Anode
Cathode

MA157-TX
1SS226



RD5.6ESB2
RD8.2ESB3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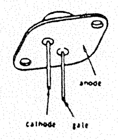
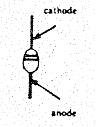
anode

SLP281C-50
TLG123A


anode
cathode
gate

U05G


cathode
anode

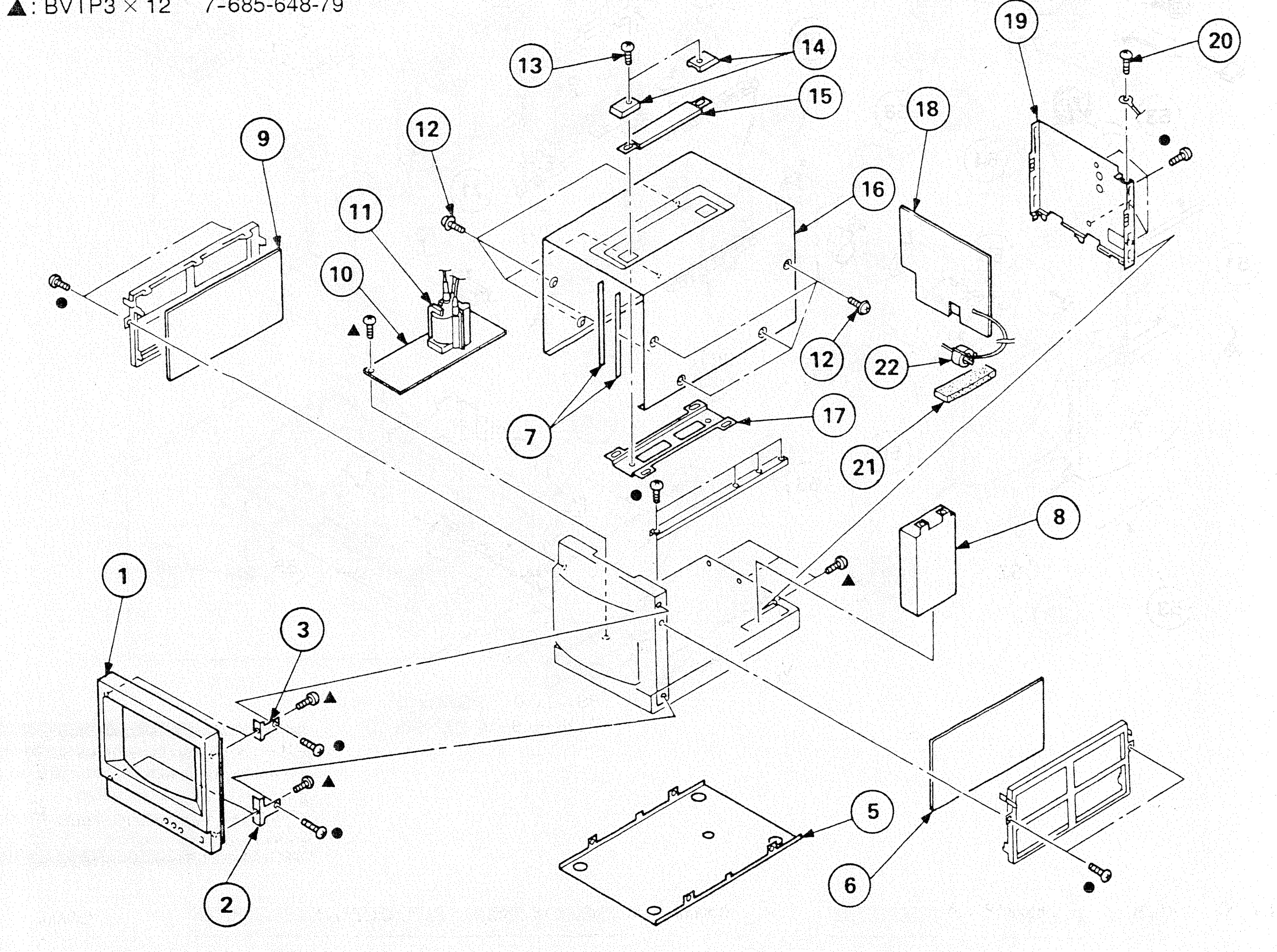
SECTION 7
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. CHASSIS

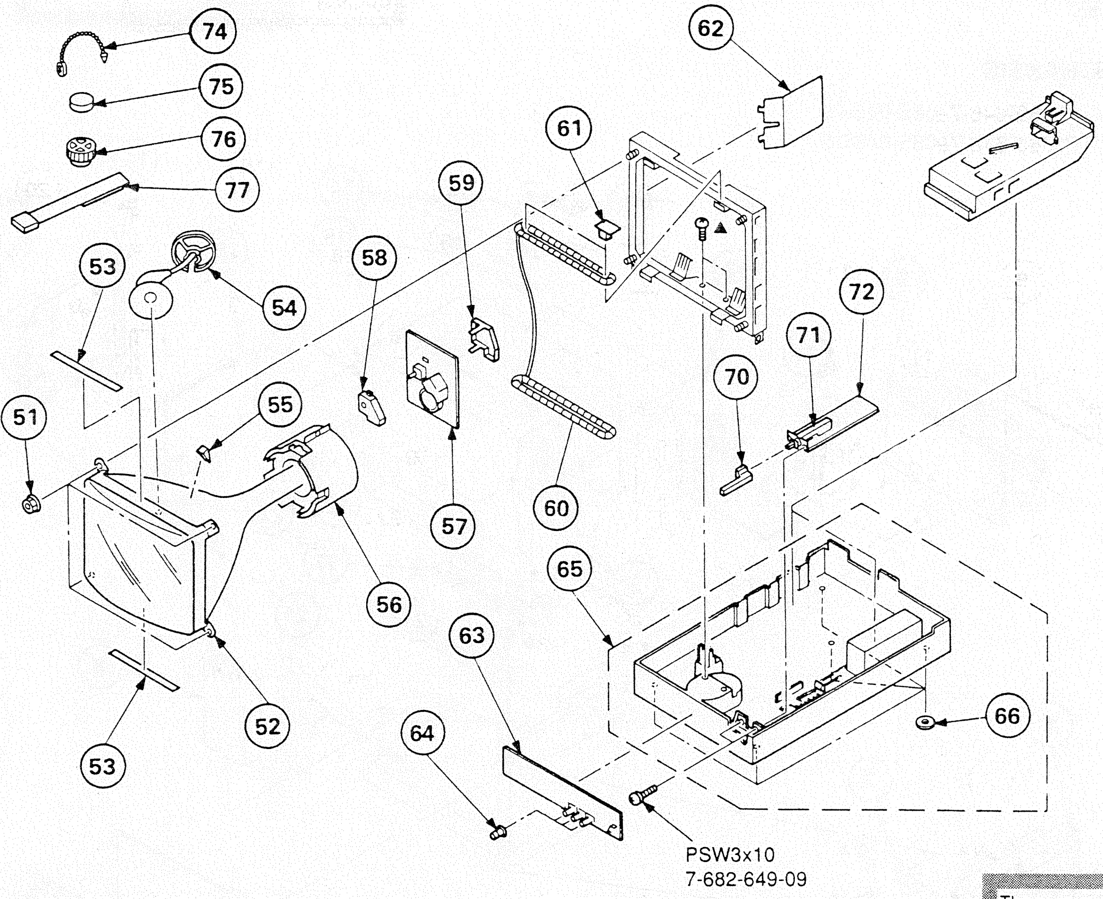
●: BVTP3 × 8 7-685-646-79
▲: BVTP3 × 12 7-685-648-79



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4031-208-1	BEZEL ASSY	
2	*4-034-845-01	BRACKET (L), BEZEL	
3	*4-034-846-01	BRACKET (U), BEZEL	
5	*4-034-870-02	CABINET, BOTTOM	
6	A-1135-702-B	B BOARD, COMPLETE	
8	⚠.1-413-720-22	SWITCHING REGULATOR (SOPS-1021)	
9	A-1346-020-B	D BOARD, COMPLETE	
10	*A-1195-048-C	P BOARD, COMPLETE	
11	⚠.1-439-526-12	TRANSFORMER ASSY, FLYBACK	
12	4-034-834-01	SCREW (CLAW) (4X6), CASE	
13	4-035-452-01	SCREW (M4X10)	
14	4-034-847-01	HANDLE (BASE)	
15	3-419-372-31	HANDLE	
16	*4-034-867-01	CABINET	
17	*X-4030-273-1	REINFORCEMENT ASSY, HANDLE	
18	A-1275-112-A	QA BOARD, COMPLETE	
19	*4-034-864-31	CHASSIS, R	
20	4-389-025-01	SCREW (M4X8)(EXT TOOTH WASHER)	
21	*4-036-058-01	SPONGE	
22	1-941-913-02	CORE ASSY, FERRITE	

7-2. PICTURE TUBE

▲ : BVTP3 × 12   7-685-648-79



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
51	4-304-511-00	NUT (M5), FLANGE	
52	⚠.8-737-154-05	PICTURE TUBE (A20JKU10X)	
53	4-035-332-01	CLOTH, PROTECTION	
54	*4-034-856-01	HOLDER, HV CABLE	
55	4-309-369-00	SPACER, DEFLECTION YOKE	
56	⚠.1-451-319-22	DEFLECTION YOKE (Y9FXC)	
57	*1-641-720-11	CA BOARD	
58	4-376-133-11	COVER (MAIN), CV VOL	
59	4-376-132-11	COVER (REAR LID), CV VOL	
60	⚠.1-426-043-12	COIL, DEGAUSSING	
61	4-380-534-01	CAP, DGC	
62	*4-034-850-01	INSULATOR	
63	A-1371-935-A	HA BOARD, COMPLETE	
64	X-4030-162-2	KNOB ASSY, CONTROL	
65	*X-4030-166-4	CHASSIS ASSY, BOTTOM	66
66	4-034-840-01	RUBBER, FOOT	
70	⚠.4-034-841-01	SWITCH, POWER	
71	⚠.1-692-050-11	SWITCH, PUSH (AC POWER) (1KEY)	
72	*1-641-723-11	FA BOARD	
74	4-308-870-00	CLIP, LEAD WIRE	
75	1-452-126-11	MAGNET	
76	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM φ	
77	X-4308-815-0	PERMALLOY ASSY, CONVERGENCE	

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

- The components identified by ⧗ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION			REMARK
	A-1135-702-B	B BOARD, COMPLETE ******************			
		<FILTER>			
BPF102	1-236-364-11	FILTER, BAND PASS			
		<CAPACITOR>			
C101	1-124-589-11	ELECT	47MF	20%	16V
C102	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C104	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C105	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C110	1-124-120-11	ELECT	220MF	20%	16V
C111	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C113	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C114	1-124-477-11	ELECT	47MF	20%	16V
C115	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C116	1-124-589-11	ELECT	47MF	20%	16V
C117	1-126-154-11	ELECT	47MF	20%	6.3V
C119	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C120	1-126-154-11	ELECT	47MF	20%	6.3V
C121	1-126-154-11	ELECT	47MF	20%	6.3V
C122	1-124-477-11	ELECT	47MF	20%	16V
C123	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C124	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C125	1-126-154-11	ELECT	47MF	20%	6.3V
C126	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C127	1-126-154-11	ELECT	47MF	20%	6.3V
C128	1-126-154-11	ELECT	47MF	20%	6.3V
C129	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C130	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C131	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C138	1-124-589-11	ELECT	47MF	20%	16V
C139	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C142	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C143	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C146	1-126-157-11	ELECT	10MF	20%	16V
C150	1-124-589-11	ELECT	47MF	20%	16V
C153	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C154	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C158	1-124-477-11	ELECT	47MF	20%	16V
C161	1-124-902-00	ELECT	0.47MF	20%	50V
C162	1-124-903-11	ELECT	1MF	20%	50V
C163	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C164	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C165	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C166	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C167	1-124-477-11	ELECT	47MF	20%	16V
C168	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C169	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C170	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C171	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C172	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C173	1-124-589-11	ELECT	47MF	20%	16V
C174	1-124-477-11	ELECT	47MF	20%	16V
C175	1-108-792-11	MYLAR	0.001MF	5%	50V
C177	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C178	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C179	1-126-160-11	ELECT	1MF	20%	50V
C180	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C181	1-126-154-11	ELECT	47MF	20%	6.3V
C182	1-126-163-11	ELECT	4.7MF	20%	16V
C183	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C184	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C185	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C186	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C187	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C188	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C189	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C191	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C192	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C193	1-124-589-11	ELECT	47MF	20%	16V
C194	1-124-589-11	ELECT	47MF	20%	16V
C196	1-124-589-11	ELECT	47MF	20%	16V
C197	1-124-589-11	ELECT	47MF	20%	16V
C198	1-124-589-11	ELECT	47MF	20%	16V
C202	1-124-589-11	ELECT	47MF	20%	16V
C204	1-124-589-11	ELECT	47MF	20%	16V
C209	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C213	1-124-589-11	ELECT	47MF	20%	16V
C219	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C220	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C221	1-124-903-11	ELECT	1MF	20%	50V
C223	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C224	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C225	1-124-477-11	ELECT	47MF	20%	16V
C226	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C227	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C228	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V
C229	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C230	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C231	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V
C232	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C233	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C234	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C235	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V
C236	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C237	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C238	1-164-299-11	CERAMIC CHIP	0.22MF	10%	25V
C239	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C240	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V

B

REF.NO.	PART NO.	DESCRIPTION			REMARK
C241	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C242	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C243	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C244	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C245	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C250	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C251	1-110-364-11	MYLAR	0.1MF	10%	200V
C252	1-123-935-00	ELECT	33MF	20%	160V
C253	1-124-477-11	ELECT	47MF	20%	16V
C254	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C255	1-124-477-11	ELECT	47MF	20%	16V
C256	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C257	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C258	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C260	1-124-465-00	ELECT	0.47MF	20%	50V
C261	1-137-193-11	FILM	0.39MF	5%	50V
C262	1-124-465-00	ELECT	0.47MF	20%	50V
C264	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C268	1-124-477-11	ELECT	47MF	20%	16V
C279	1-126-157-11	ELECT	10MF	20%	16V
C280	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C284	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C299	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C300	1-126-157-11	ELECT	10MF	20%	16V
C301	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C302	1-124-589-11	ELECT	47MF	20%	16V
C303	1-126-157-11	ELECT	10MF	20%	16V
C304	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C305	1-124-257-00	ELECT	2.2MF	20%	50V
C306	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C307	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V
C311	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C313	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C314	1-126-157-11	ELECT	10MF	20%	16V
C315	1-164-299-11	CERAMIC CHIP	0.22MF	10%	25V
C316	1-126-157-11	ELECT	10MF	20%	16V
C317	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C321	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C322	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C323	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C344	1-163-092-00	CERAMIC CHIP	9PF	0.25PF	50V
C1001	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C1293	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C1294	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C1295	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C1296	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C1297	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C1298	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C1299	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C1303	1-126-160-11	ELECT	1MF	20%	50V
		<CONNECTOR>			
CN101	1-506-480-11	PIN, CONNECTOR 15P			
CN102	*1-564-506-11	PLUG, CONNECTOR 3P			
CN103	*1-565-503-11	CONNECTOR, BOARD TO BOARD 12P			
CN104	*1-564-011-11	PIN, CONNECTOR 12P			
CN105	*1-564-509-11	PLUG, CONNECTOR 6P			
CN107	1-506-478-11	PIN, CONNECTOR 13P			
		<TRAP MODULE>			
CTR101	1-236-366-11	MODULE, TRAP			
CTR102	1-236-365-11	MODULE, TRAP			

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<TRIMMER>	
CV102	1-141-418-11	CAP, ADJ	
		<DIODE>	
D103	8-719-404-46	DIODE MA110	
D104	8-719-404-46	DIODE MA110	
D106	8-719-404-46	DIODE MA110	
D107	8-719-404-46	DIODE MA110	
D108	8-719-404-46	DIODE MA110	
D113	8-719-404-46	DIODE MA110	
D120	8-719-404-46	DIODE MA110	
D121	8-719-404-46	DIODE MA110	
D123	8-719-404-46	DIODE MA110	
D127	8-719-404-46	DIODE MA110	
D129	8-719-404-46	DIODE MA110	
D130	8-719-800-76	DIODE 1SS226	
D131	8-719-800-76	DIODE 1SS226	
D132	8-719-800-76	DIODE 1SS226	
D133	8-719-404-46	DIODE MA110	
D134	8-719-404-46	DIODE MA110	
D135	8-719-404-46	DIODE MA110	
D136	8-719-404-46	DIODE MA110	
D137	8-719-404-46	DIODE MA110	
D138	8-719-404-46	DIODE MA110	
D141	8-719-404-46	DIODE MA110	
D144	8-719-404-46	DIODE MA110	
D145	8-719-404-46	DIODE MA110	
D146	8-719-404-46	DIODE MA110	
D148	8-719-404-46	DIODE MA110	
D149	8-719-404-46	DIODE MA110	
D150	8-719-404-46	DIODE MA110	
D151	8-719-404-46	DIODE MA110	
D152	8-719-404-46	DIODE MA110	
D153	8-719-977-20	DIODE DTZ8.2B	
D154	8-719-404-46	DIODE MA110	
D155	8-719-404-46	DIODE MA110	
D156	8-719-404-46	DIODE MA110	
D157	8-719-901-83	DIODE 1SS83	
D158	8-719-901-83	DIODE 1SS83	
D159	8-719-901-83	DIODE 1SS83	
D163	8-719-404-46	DIODE MA110	
D180	8-719-404-46	DIODE MA110	
D285	8-719-404-46	DIODE MA110	
D341	8-719-404-46	DIODE MA110	
D343	8-719-800-76	DIODE 1SS226	
D344	8-719-105-XX	DIODE RD6.2M-B1	
D345	8-719-901-83	DIODE 1SS83	
D346	8-719-901-83	DIODE 1SS83	
D347	8-719-901-83	DIODE 1SS83	
D348	8-719-800-76	DIODE 1SS226	
D349	8-719-800-76	DIODE 1SS226	
D350	8-719-800-76	DIODE 1SS226	
		<DELAY LINE>	
DL101	1-415-632-11	DELAY LINE, Y	
DL102	1-415-633-11	DELAY LINE, Y	
		<IC>	

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC101	8-759-048-09	IC MM1148XF	
IC102	8-759-501-21	8C MM1149XF	
IC103	8-759-501-21	8C MM1149XF	
IC104	8-759-501-21	8C MM1149XF	
IC107	8-759-509-57	IC XRU4584BF	
IC109	8-759-509-37	IC XRU4070BF	
IC111	8-759-509-17	IC XRU4053BF	
IC112	8-759-924-12	IC LM7805CT	
IC113	8-759-631-08	IC M51279FP	
IC117	8-759-048-09	IC MM1148XF	
IC118	8-759-048-09	IC MM1148XF	
IC119	8-759-501-21	8C MM1149XF	
IC123	8-759-998-98	IC LM358D	
IC124	8-752-052-62	IC CXA1478S	
IC129	8-759-998-98	IC LM358D	

<JUMPER RESISTOR>

JR103	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR104	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR106	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR107	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR108	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR109	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR111	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR113	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR114	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR116	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR120	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR122	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR123	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR125	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR128	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR131	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR134	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR135	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR136	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR137	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR139	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR171	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR172	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR173	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR176	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR185	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR186	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR187	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR188	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR189	1-216-295-00	METAL GLAZE	0	5%	1/10W

<COIL>

L101	1-410-470-11	INDUCTOR	10UH
L106	1-410-470-11	INDUCTOR	10UH
L107	1-410-470-11	INDUCTOR	10UH
L112	1-408-419-00	INDUCTOR	68UH
L250	1-410-997-31	INDUCTOR CHIP	2.2UH
L252	1-410-478-11	INDUCTOR	47UH
L300	1-410-482-31	INDUCTOR	100UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q101	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q102	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q104	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q105	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q107	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q108	8-729-216-22	TRANSISTOR 2SA1162-G	
Q112	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q117	8-729-216-22	TRANSISTOR 2SA1162-G	
Q120	8-729-216-22	TRANSISTOR 2SA1162-G	
Q125	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q127	8-729-216-22	TRANSISTOR 2SA1162-G	
Q128	8-729-216-22	TRANSISTOR 2SA1162-G	
Q130	8-729-216-22	TRANSISTOR 2SA1162-G	
Q131	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q136	8-729-907-26	TRANSISTOR IMX1	
Q137	8-729-907-26	TRANSISTOR IMX1	
Q138	8-729-907-26	TRANSISTOR IMX1	
Q140	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q144	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q146	8-729-255-12	TRANSISTOR 2SC2551-0	
Q147	8-729-255-12	TRANSISTOR 2SC2551-0	
Q148	8-729-216-22	TRANSISTOR 2SA1162-G	
Q149	8-729-200-17	TRANSISTOR 2SA1091-0	
Q150	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q151	8-729-216-22	TRANSISTOR 2SA1162-G	
Q152	8-729-200-17	TRANSISTOR 2SA1091-0	
Q153	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q154	8-729-216-22	TRANSISTOR 2SA1162-G	
Q155	8-729-200-17	TRANSISTOR 2SA1091-0	
Q156	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q157	8-729-326-11	TRANSISTOR 2SC2611	
Q158	8-729-326-11	TRANSISTOR 2SC2611	
Q159	8-729-326-11	TRANSISTOR 2SC2611	
Q160	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q161	8-729-216-22	TRANSISTOR 2SA1162-G	
Q165	8-729-216-22	TRANSISTOR 2SA1162-G	
Q166	8-729-216-22	TRANSISTOR 2SA1162-G	
Q167	8-729-216-22	TRANSISTOR 2SA1162-G	
Q169	8-729-901-01	TRANSISTOR DTC144EK	
Q171	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q173	8-729-216-22	TRANSISTOR 2SA1162-G	
Q174	8-729-216-22	TRANSISTOR 2SA1162-G	
Q175	8-729-216-22	TRANSISTOR 2SA1162-G	
Q176	8-729-216-22	TRANSISTOR 2SA1162-G	
Q189	8-729-907-26	TRANSISTOR IMX1	
Q191	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q192	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q193	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q194	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q195	8-729-216-22	TRANSISTOR 2SA1162-G	
Q196	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q197	8-729-216-22	TRANSISTOR 2SA1162-G	
Q198	8-729-216-22	TRANSISTOR 2SA1162-G	
Q199	8-729-216-22	TRANSISTOR 2SA1162-G	
Q200	8-729-901-06	TRANSISTOR DTA144EK	
Q204	8-729-216-22	TRANSISTOR 2SA1162-G	
Q205	8-729-216-22	TRANSISTOR 2SA1162-G	
Q206	8-729-216-22	TRANSISTOR 2SA1162-G	
Q208	8-729-216-22	TRANSISTOR 2SA1162-G	
Q209	8-729-255-12	TRANSISTOR 2SC2551-0	
Q210	8-729-255-12	TRANSISTOR 2SC2551-0	
Q211	8-729-255-12	TRANSISTOR 2SC2551-0	
Q213	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q299	8-729-422-27	TRANSISTOR 2SD601A-Q	

<RESISTOR>

B

REF.NO.	PART NO.	DESCRIPTION				REMARK
R101	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R102	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R103	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R104	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R105	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R106	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R107	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R110	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R116	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R118	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R119	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R120	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R121	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R122	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R123	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R125	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R126	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R127	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R128	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R129	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R131	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R132	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R133	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R134	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R135	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R136	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R137	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R138	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W	
R139	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R140	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W	
R141	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R156	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R158	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R159	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R162	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R166	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R167	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R168	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R169	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R170	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R171	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R182	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R190	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R191	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R200	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R201	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R202	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R203	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R206	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R207	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R208	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R212	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R218	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R223	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R225	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R226	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R227	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R228	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R229	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R230	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R231	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R232	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R234	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R235	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R236	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R238	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R239	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R240	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R242	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R243	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R244	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R245	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R246	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R247	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R248	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R249	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R250	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R251	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R252	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R253	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R254	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R258	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R263	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R274	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R275	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R276	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R282	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R288	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R293	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R301	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R302	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R315	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R316	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R317	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R319	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R321	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R325	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R326	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R328	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R329	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R330	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R331	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R332	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R333	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R334	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R335	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R336	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R338	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R339	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R340	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R342	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R343	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R344	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W	
R345	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R346	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R347	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R348	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R359	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R360	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R361	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R362	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R363	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R364	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R365	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R366	1-216-244-00	METAL GLAZE	82K	5%	1/8W	
R367	1-216-244-00	METAL GLAZE	82K	5%	1/8W	
R368	1-216-295-00	METAL GLAZE	0	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R369	1-216-248-00	METAL GLAZE	120K	5%	1/8W	
R370	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R372	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R373	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R374	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R375	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R376	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R378	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R379	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R380	1-216-668-11	METAL CHIP	5.1K	0.50%	1/10W	
R381	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R382	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R383	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R384	1-216-668-11	METAL CHIP	5.1K	0.50%	1/10W	
R385	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R386	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R387	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R388	1-216-668-11	METAL CHIP	5.1K	0.50%	1/10W	
R390	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R391	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R392	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R393	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R394	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R395	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R397	1-249-437-11	CARBON	47K	5%	1/4W	F
R398	1-249-434-11	CARBON	27K	5%	1/4W	F
R1002	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R1003	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R1004	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1005	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R1006	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R1007	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1008	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R1009	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R1010	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1014	1-216-246-00	METAL GLAZE	100K	5%	1/8W	
R1025	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1026	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1028	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1029	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1031	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1032	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1039	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R1040	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1041	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R1042	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R1043	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1044	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1045	1-216-125-00	METAL GLAZE	1.5M	5%	1/10W	
R1046	1-216-689-11	METAL CHIP	39K	0.50%	1/10W	
R1047	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1048	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1051	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R1058	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R1059	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R1060	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R1061	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R1062	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R1063	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R1064	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R1065	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R1067	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1068	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1069	1-216-133-00	METAL GLAZE	3.3M	5%	1/10W	
R1070	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R1071	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R1072	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R1073	1-216-131-11	METAL GLAZE	2.7M	5%	1/10W	
R1075	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1076	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R1077	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R1079	1-216-131-11	METAL GLAZE	2.7M	5%	1/10W	
R1080	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R1081	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R1083	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1084	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R1086	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1087	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R1200	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R1201	1-218-754-11	METAL CHIP	120K	0.50%	1/10W	
R1202	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R1203	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R1207	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R1208	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1209	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R1210	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1211	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R1212	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1223	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R1225	1-215-876-00	METAL OXIDE	15K	5%	1W	F
R1226	1-215-876-00	METAL OXIDE	15K	5%	1W	F
R1227	1-215-876-00	METAL OXIDE	15K	5%	1W	F
R1228	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R1229	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R1230	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R1231	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R1232	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R1233	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R1234	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R1235	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R1236	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R1237	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R1238	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R1239	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R1271	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1290	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R1291	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R1294	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R1295	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R1296	1-216-111-00	METAL GLAZE	390K	5%	1/10W	
R1297	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R1298	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R1299	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R1301	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1302	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R1303	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R1304	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R1305	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R1306	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R1308	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R1310	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R1313	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R1320	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R1321	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R1322	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R1323	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R1324	1-216-121-00	METAL GLAZE	1M	5%	1/10W	

B **P**

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
R1325	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R1326	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1327	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R1328	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R1329	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R1330	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R1331	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R1332	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1333	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1334	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R1335	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R1336	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R1337	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R1338	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R1350	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1351	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1352	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1353	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R1371	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1372	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1373	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R1392	1-216-089-00	METAL GLAZE 47K 5% 1/10W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
RV105	1-241-627-11	RES, ADJ, CARBON 1K	
RV109	1-241-765-11	RES, ADJ, CERMET 22K	
RV110	1-241-630-11	RES, ADJ, CARBON 10K	
RV113	1-238-019-11	RES, ADJ, CARBON 47K	
RV115	1-241-631-11	RES, ADJ, CARBON 22K	
RV118	1-241-631-11	RES, ADJ, CARBON 22K	
RV119	1-241-631-11	RES, ADJ, CARBON 22K	
RV120	1-241-631-11	RES, ADJ, CARBON 22K	
RV121	1-241-631-11	RES, ADJ, CARBON 22K	
RV122	1-241-631-11	RES, ADJ, CARBON 22K	
RV205	1-241-631-11	RES, ADJ, CARBON 22K	

<MODULE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
SEP101	1-808-654-11	MODULE	

<CRYSTAL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
X102	1-577-259-11	VIBRATOR, CRYSTAL	

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*A-1195-048-A P BOARD, COMPLETE
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<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
C801	1-126-104-11	ELECT 470MF 20%	35V
C802	1-162-318-11	CERAMIC 0.001MF 10%	500V
C803	1-102-228-00	CERAMIC 470PF 10%	500V
C804	1-123-935-00	ELECT 33MF 20%	160V
C806	1-124-480-11	ELECT 470MF 20%	25V
C807	1-102-228-00	CERAMIC 470PF 10%	500V
C808	1-106-367-00	MYLAR 0.01MF 10%	100V
C809	1-106-375-12	MYLAR 0.022MF 10%	100V
C810	1-162-318-11	CERAMIC 0.001MF 10%	500V
C811 ⚠.	1-137-544-91	FILM 0.01MF 3%	600V
C812 ⚠.	1-137-545-91	FILM 0.013MF 3%	600V
C813	1-106-385-00	MYLAR 0.056MF 5%	200V
C814	1-106-383-00	MYLAR 0.047MF 10%	100V
C815	1-124-916-11	ELECT 22MF 20%	50V
C816	1-124-798-11	ELECT 1MF 20%	160V
C817	1-130-800-00	FILM 2.2MF 10%	250V
C818	1-102-228-00	CERAMIC 470PF 10%	500V
C819	1-162-116-00	CERAMIC 680PF 10%	2KV
C820	1-162-116-00	CERAMIC 680PF 10%	2KV
C821	1-162-116-00	CERAMIC 680PF 10%	2KV
C880	1-163-031-11	CERAMIC CHIP 0.01MF	50V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN801	*1-564-595-11	PLUG, CONNECTOR 14P	
CN802	*1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P	
CN803	*1-564-508-11	PLUG, CONNECTOR 5P	
CN805	*1-560-123-00	PLUG, CONNECTOR (2.5MM) 3P	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D801	8-719-936-84	DIODE RGP10GPKG3	
D802	8-719-936-84	DIODE RGP10GPKG3	
D803	8-719-936-84	DIODE RGP10GPKG3	
D804	8-719-979-85	DIODE EGP20G	
D805	8-719-936-84	DIODE RGP10GPKG3	
D806	8-719-936-84	DIODE RGP10GPKG3	
D807	8-719-105-XX	DIODE RD6.2M-B1	
D808	8-719-008-28	THYRISTOR CR02AM-4TB	
D809	8-719-908-03	DIODE GP08D	
D810	8-719-908-03	DIODE GP08D	
D811	8-719-908-03	DIODE GP08D	
D813	8-719-936-84	DIODE RGP10GPKG3	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L802	1-459-442-00	COIL (WITH CORE)	
L803	1-422-613-11	COIL, AIR CORE	
L804	1-459-109-00	COIL,DUST CORE	
L805 ⚠.	1-460-225-11	COIL, HORIZONTAL LINEARITY	
L806	1-414-098-11	MICRO INDUCTOR 10MMH	
L807	1-414-098-11	MICRO INDUCTOR 10MMH	

<NEON LAMP>

REF.NO.	PART NO.	DESCRIPTION	REMARK
NL801	1-519-108-XX	LAMP, NEON	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q801	8-729-195-82	TRANSISTOR 2SC2958-L	
Q802	8-729-201-62	TRANSISTOR 2SC2555-2	
	*4-363-404-00	HOLDER, IC; Q802	
	4-382-854-01	SCREW (M3X8), P, SW (+); Q802	
	4-879-937-00	SHEET, MICA; Q802	
Q803	8-729-906-24	TRANSISTOR 2SD835	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R801	1-249-383-11	CARBON 1.5 5% 1/4W	F
R802	1-249-377-11	CARBON 0.47 5% 1/4W	F
R803	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R804	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R805	1-215-892-11	METAL OXIDE 1K 5% 2W	F
R807	1-216-425-11	METAL OXIDE 56 5% 1W	F
R808	1-202-846-00	SOLID 470K 20% 1/2W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R809	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R810	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R811	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R812	1-249-439-11	CARBON	68K	5%	1/4W	F
R813	1-249-414-11	CARBON	560	5%	1/4W	F
R814	1-249-377-11	CARBON	0.47	5%	1/4W	F

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV801	1-223-102-00	RES, ADJ, WIREWOUND 120

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION
T801	1-437-082-31	HDT
T802	⚠.1-439-526-12	TRANSFORMER ASSY, FLYBACK

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*1-641-723-11 FA BOARD
****

1-533-223-11 CLIP, FUSE

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C601	1-136-185-00	FILM	0.22MF	20%	250V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN601	*1-580-689-11	PIN, CONNECTOR (PC BOARD) 4P
CN602	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P
CN603	*1-564-507-11	PLUG, CONNECTOR 4P

<FUSE>

REF.NO.	PART NO.	DESCRIPTION
F601	⚠.1-576-230-11	FUSE (H.B.C.) (3.15A/250V)

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION			
R602	⚠.1-208-290-91	METAL GLAZE	2.2M	5%	1/2W

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION
S601	⚠.1-692-050-11	SWITCH, PUSH (AC POWER) (1KEY)

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A-1275-112-A QA BOARD, COMPLETE
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⚠.1-537-520-11 TERMINAL BOARD, INPUT/OUTPUT & AC INLET

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C401	1-124-234-00	ELECT	22MF	20%	16V
C402	1-124-234-00	ELECT	22MF	20%	16V
C429	1-124-234-00	ELECT	22MF	20%	16V
C430	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C435	1-124-234-00	ELECT	22MF	20%	16V
C437	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C438	1-124-234-00	ELECT	22MF	20%	16V
C441	1-124-234-00	ELECT	22MF	20%	16V
C442	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C445	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C451	1-163-033-00	CERAMIC CHIP	0.022MF		50V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN401	1-564-877-11	PIN, CONNECTOR 15P
CN403	*1-580-690-11	PIN, CONNECTOR (PC BOARD) 2P
CN404	*1-564-519-11	PLUG, CONNECTOR 4P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D404	8-719-404-46	DIODE MA110
D405	8-719-404-46	DIODE MA110

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L402	1-410-682-31	INDUCTOR	470UH

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION
Q401	8-729-422-27	TRANSISTOR 2SD601A-Q

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION			
R401	1-214-702-00	METAL	75	1%	1/4W
R402	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R403	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R404	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R405	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R406	1-216-037-00	METAL GLAZE	330	5%	1/10W
R1401	1-216-097-00	METAL GLAZE	100K	5%	1/10W

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV401	1-230-481-11	RES, VAR, CARBON 20K

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*1-641-720-11 CA BOARD
****

1-526-958-41 SOCKET, PICTURE TUBE

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			
C701	1-162-114-00	CERAMIC	0.0047MF	10%	2KV
C702	1-102-050-00	CERAMIC	0.01MF	99%	500V
C710	1-161-830-00	CERAMIC	0.0047MF	99%	500V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN701	*1-564-509-11	PLUG, CONNECTOR 6P
CN702	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P
CN703	*1-564-508-11	PLUG, CONNECTOR 5P

<COIL>

REF.NO.	PART NO.	DESCRIPTION	
L701	1-410-668-11	INDUCTOR	27UH

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION			
R701	1-202-822-00	SOLID	2.2K	20%	1/2W
R702	1-202-822-00	SOLID	2.2K	20%	1/2W
R703	1-202-822-00	SOLID	2.2K	20%	1/2W
R704	1-202-838-00	SOLID	100K	20%	1/2W
R705	1-202-719-00	SOLID	1M	20%	1/2W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
R706	1-202-842-11	SOLID	220K	20%	1/2W

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION
RV701	1-230-164-00	RES, ADJ, METAL GLAZE 55M
	*4-376-132-11	COVER (REAR LID), CV VOL; RV701
	*4-376-133-11	COVER (MAIN), CV VOL; RV701

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A-1346-020-B D BOARD, COMPLETE
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<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C502	1-124-907-11	ELECT	10MF	20%	50V
C503	1-126-103-11	ELECT	470MF	20%	16V
C504	1-124-902-00	ELECT	0.47MF	20%	50V
C505	1-106-381-12	MYLAR	0.039MF	10%	100V
C506	1-124-903-11	ELECT	1MF	20%	50V
C507	1-106-367-00	MYLAR	0.01MF	10%	100V
C508	1-124-903-11	ELECT	1MF	20%	50V
C509	1-136-173-00	FILM	0.47MF	5%	50V
C510	1-136-161-00	FILM	0.047MF	5%	50V
C511	1-124-903-11	ELECT	1MF	20%	50V
C512	1-106-375-12	MYLAR	0.022MF	10%	100V
C513	1-106-375-12	MYLAR	0.022MF	10%	100V
C514	1-106-371-00	MYLAR	0.015MF	10%	100V
C515	1-124-925-11	ELECT	2.2MF	20%	50V
C516	1-124-925-11	ELECT	2.2MF	20%	50V
C517	1-130-480-00	FILM	0.0056MF	5%	50V
C519	1-124-927-11	ELECT	4.7MF	20%	50V
C520	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C521	1-124-907-11	ELECT	10MF	20%	50V
C523	1-106-363-00	MYLAR	0.0068MF	10%	100V
C524	1-102-116-00	CERAMIC	680PF	10%	50V
C525	1-102-820-00	CERAMIC	330PF	5%	50V
C526	1-102-973-00	CERAMIC	100PF	5%	50V
C527	1-124-122-11	ELECT	100MF	20%	50V
C528	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C529	1-124-910-11	ELECT	47MF	20%	50V
C531	1-131-370-00	TANTALUM	6.8MF	10%	16V
C532	1-124-557-11	ELECT	1000MF	20%	25V
C533	1-124-927-11	ELECT	4.7MF	20%	50V
C534	1-124-768-11	ELECT	4.7MF	20%	50V
C535	1-136-161-00	FILM	0.047MF	5%	50V
C536	1-124-927-11	ELECT	4.7MF	20%	50V
C537	1-124-484-11	ELECT	220MF	20%	35V
C538	1-124-910-11	ELECT	47MF	20%	50V
C539	1-136-113-00	FILM	2MF	5%	200V
C542	1-126-103-11	ELECT	470MF	20%	16V
C545	1-126-101-11	ELECT	100MF	20%	16V
C546	1-124-907-11	ELECT	10MF	20%	50V
C547	1-124-907-11	ELECT	10MF	20%	50V
C548	1-124-907-11	ELECT	10MF	20%	50V
C549	1-124-907-11	ELECT	10MF	20%	50V
C550	1-124-907-11	ELECT	10MF	20%	50V
C551	1-124-927-11	ELECT	4.7MF	20%	50V
C552	1-101-004-00	CERAMIC	0.01MF		50V
C553	1-126-103-11	ELECT	470MF	20%	16V
C563	1-106-383-00	MYLAR	0.047MF	10%	100V
C570	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C571	1-124-913-11	ELECT	470MF	20%	50V
C572	1-101-004-00	CERAMIC	0.01MF		50V
C573	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C574	1-106-351-00	MYLAR	0.0022MF	10%	100V
C575	1-106-351-00	MYLAR	0.0022MF	10%	100V
C831	1-124-907-11	ELECT	10MF	20%	50V
C833	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C834	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C835	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V
C836	1-124-907-11	ELECT	10MF	20%	50V
C837	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V
C840	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V
C841	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V
C843	1-124-902-00	ELECT	0.47MF	20%	50V
C844	1-124-902-00	ELECT	0.47MF	20%	50V
C845	1-124-477-11	ELECT	47MF	20%	25V
C846	1-124-907-11	ELECT	10MF	20%	50V
C847	1-124-916-11	ELECT	22MF	20%	50V
C848	1-131-351-00	TANTALUM	4.7MF	10%	35V
C849	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION
CN501	*1-564-506-11	PLUG, CONNECTOR 3P
CN502	*1-564-011-11	PIN, CONNECTOR 12P
CN504	*1-564-507-11	PLUG, CONNECTOR 4P
CN505	*1-564-506-11	PLUG, CONNECTOR 3P
CN509	*1-564-506-11	PLUG, CONNECTOR 3P

<DIODE>

REF.NO.	PART NO.	DESCRIPTION
D501	8-719-404-46	DIODE MA110
D506	8-719-908-03	DIODE GP08D
D507	8-719-404-46	DIODE MA110
D508	8-719-404-46	DIODE MA110
D512	8-719-404-46	DIODE MA110
D514	8-719-404-46	DIODE MA110
D515	8-719-404-46	DIODE MA110
D831	8-719-404-46	DIODE MA110
D832	8-719-404-46	DIODE MA110
D833	8-719-404-46	DIODE MA110
D834	8-719-404-46	DIODE MA110
D835	8-719-109-89	DIODE RD5.6ESB2
D836	8-719-977-69	DIODE DTZ24B
D848	8-719-800-76	DIODE 1SS226

<FUSE>

REF.NO.	PART NO.	DESCRIPTION
F1601⚠	1-532-777-21	FUSE, MICRO (SECONDARY) (1.25A/125V)

<IC>

REF.NO.	PART NO.	DESCRIPTION
IC502	8-759-100-60	IC UPC1377C
IC503	8-759-801-98	IC LA7830
	4-382-854-01	SCREW (M3X8), P, SW (+); IC503
	8-759-701-79	IC NJM7812FA
IC504	4-382-854-01	SCREW (M3X8), P, SW (+); IC504
IC831	8-759-509-29	IC XRU4011BF
IC832	8-759-509-37	IC XRU4070BF

<JUMPER RESISTOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
JR501	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR502	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR504	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR505	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR506	1-216-295-00	METAL GLAZE	0	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION				REMARK
JR508	1-216-295-00	METAL GLAZE	0	5%	1/10W	
JR509	1-216-295-00	METAL GLAZE	0	5%	1/10W	
JR511	1-216-295-00	METAL GLAZE	0	5%	1/10W	
		<COIL>				
L501	1-410-093-11	INDUCTOR	33MMH			
L502	1-410-665-31	INDUCTOR	15UH			
L503	1-424-625-11	COIL, CHOKE (PMC)	381.4UH			
L506	1-412-530-31	INDUCTOR	27UH			
		<TRANSISTOR>				
Q512	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q513	8-729-216-22	TRANSISTOR	2SA1162-G			
Q514	8-729-216-22	TRANSISTOR	2SA1162-G			
Q515	8-729-313-42	TRANSISTOR	2SD1134-C			
	4-382-854-01	SCREW (M3X8), P, SW (+); Q515				
Q518	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q519	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q532	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q534	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q569	8-729-907-26	TRANSISTOR	IMX1			
Q833	8-729-216-22	TRANSISTOR	2SA1162-G			
Q834	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q835	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q836	8-729-255-12	TRANSISTOR	2SC2551-O			
		<RESISTOR>				
R504	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R505	1-249-393-11	CARBON	10	5%	1/4W	F
R506	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R507	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R508	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R509	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R510	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R511	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R515	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R516	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R518	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R519	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R520	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R521	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R523	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R524	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R525	1-216-434-11	METAL OXIDE	1.8K	5%	1W	F
R526	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R535	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R536	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R537	1-215-867-00	METAL OXIDE	470	5%	1W	F
R538	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R539	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R541	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R542	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R545	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R546	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R547	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R548	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R549	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R550	1-216-356-00	METAL OXIDE	3.9	5%	1W	F
R551	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R552	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R553	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R554	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R555	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R557	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R558	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R559	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R560	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R561	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R562	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R564	1-249-415-11	CARBON	680	5%	1/4W	F
R567	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R568	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R569	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R570	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R571	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R572	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R573	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R574	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R575	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R576	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R577	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R591	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R592	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R832	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R833	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R834	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R835	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R836	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R837	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R838	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R839	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R840	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R843	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R844	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R845	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R846	1-249-429-11	CARBON	10K	5%	1/4W	
R850	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R851	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R852	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R853	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R854	1-218-754-11	METAL CHIP	120K	0.50%	1/10W	
R855	1-216-697-11	METAL CHIP	82K	0.50%	1/10W	
R856	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R857	1-216-686-11	METAL CHIP	30K	0.50%	1/10W	
R858	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R859	1-216-436-00	METAL OXIDE	3.9K	5%	1W	F
R860	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R861	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R862	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R863	1-249-435-11	CARBON	33K	5%	1/4W	F
R1503	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R1507	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R1508	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1509	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1510	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R1511	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1512	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1513	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R1516	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1517	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R1518	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1519	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R1520	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	

SSM-9040P

D **HA** **G**

- The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<VARIABLE RESISTOR>	
RV502	1-241-631-11	RES, ADJ, CARBON 22K	
RV503	1-241-763-11	RES, ADJ, CERMET 4.7K	
RV504	1-224-250-XX	RES, ADJ, METAL GLAZE 2.2K	
RV505	1-238-009-11	RES, ADJ, CARBON 220	
	*3-738-015-01	COVER, (DIA. 6) CARBON VR; RV505	
RV507	1-241-628-11	RES, ADJ, CARBON 2.2K	
RV508	1-241-627-11	RES, ADJ, CARBON 1K	
RV509	1-238-021-11	RES, ADJ, CARBON 220K	
RV511	1-241-630-11	RES, ADJ, CARBON 10K	
RV514	1-238-019-11	RES, ADJ, CARBON 47K	
RV515	1-238-021-11	RES, ADJ, CARBON 220K	
⧓RV833⚠	1-228-996-11	RES, ADJ, METAL GLAZE 47K	
	*3-738-015-01	COVER, (DIA. 6) CARBON VR; RV833	

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	A-1371-935-A	HA BOARD, COMPLETE ******************	
		<CONNECTOR>	
CN001	1-506-478-11	PIN, CONNECTOR 13P	
		<DIODE>	
D001	8-719-920-05	DIODE SLP281C-50	
	*4-348-208-00	HOLDER, LED; D001	
		<JUMPER>	
JW001	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JW010	1-216-295-00	METAL GLAZE 0 5% 1/10W	
		<RESISTOR>	
R001	1-247-713-11	CARBON 1K 5% 1/4W	
		<VARIABLE RESISTOR>	
RV003	1-241-846-11	RES, VAR, CARBON 20K	
RV004	1-241-845-11	RES, VAR, CARBON 20K	
RV005	1-241-845-11	RES, VAR, CARBON 20K	

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		G BOARD (SOPS-1021) *******	
	4-812-134-11	RIVET NYLON, 3.5φ	
		<CAPACITOR>	
C601	⚠1-136-889-11	METALIZED FILM 0.22MF 20% 250V	
C602	⚠1-136-889-11	METALIZED FILM 0.22MF 20% 250V	
C603	⚠1-161-973-51	CERAMIC 220PF 10% 400V	
C604	⚠1-161-973-51	CERAMIC 220PF 10% 400V	
C605	⚠1-161-973-51	CERAMIC 220PF 10% 400V	
C608	⚠1-161-742-51	CERAMIC 0.0022MF 20% 400V	
C609	⚠1-161-742-51	CERAMIC 0.0022MF 20% 400V	
C610	⚠1-125-724-11	ELECT 180MF 20% 400V	
C611	⚠1-136-206-21	METALIZED FILM 0.033MF 10% 630V	
C612	⚠1-124-910-51	ELECT 47MF 20% 50V	
C613	⚠1-137-190-91	METALIZED FILM 0.22MF 5% 50V	
C614	⚠1-137-190-91	METALIZED FILM 0.22MF 5% 50V	

REF.NO.	PART NO.	DESCRIPTION	REMARK
C615	⚠1-130-471-91	PE TEREPHTHALATE 0.001MF 5% 50V	
C651	⚠1-161-925-11	CERAMIC 100PF B 10% 500V	
C652	⚠1-128-486-51	ELECT 680MF 20% 50V	
C653	⚠1-128-485-51	ELECT 220MF 20% 50V	
C654	⚠1-130-483-91	PE TEREPHTHALATE 0.01MF 5% 50V	
		<CONNECTOR>	
CN610⚠	*1-560-436-11	HORIZONTAL PIN ASSY 3P	
CN651⚠	*1-564-518-11	PLUG, CONNECTOR 3P	
		<DIODE>	
D201	⚠8-719-971-08	DIODE ESAC39M 06C	
D601	⚠8-719-510-27	DIODE D3SB60	
D602	⚠8-719-921-20	DIODE 1SS119TD	
D603	⚠8-719-981-47	DIODE ERA38-06TP1	
D604	⚠8-719-981-47	DIODE ERA38-06TP1	
D605	⚠8-719-113-44	DIODE RD20ES-T1B3	
D651	⚠8-719-971-08	DIODE ESAC39M 06C	
		<IC>	
IC601	⚠1-809-086-12	HIC CH-1018	
IC651	⚠8-759-908-15	IC TL431CLP	
PH601	⚠8-759-045-81	IC TLP732GR-LF2	
		<COIL>	
L601	⚠1-424-616-11	TRANSFORMER, LINE FILTER	
L602	⚠1-424-574-11	L.F.T	
L651	⚠1-424-255-41	COIL, CHOKE (MOLDE) 10UH	
L652	⚠1-424-615-11	COIL, CHOKE	
		<TRANSISTOR>	
Q601	⚠8-729-322-18	TRANSISTOR 2SK1402A	
		<RESISTOR>	
R601	⚠1-205-940-51	CEMENT 1.5 5% 5W	F
R602	⚠1-205-940-51	CEMENT 1.5 5% 5W	F
R603	⚠1-215-904-11	METAL OXIDE 100K 5% 2W	F
R604	⚠1-215-904-11	METAL OXIDE 100K 5% 2W	F
R605	⚠1-212-865-61	FUSIBLE 22 5% 1/4W	F
R606	⚠1-247-805-91	CARBON 82 5% 1/4W	
R607	⚠1-260-128-91	CARBON 270K 5% 1/2W	
R608	⚠1-260-128-91	CARBON 270K 5% 1/2W	
R609	⚠1-215-904-51	METAL OXIDE 100K 5% 2W	F
R610	1-207-455-11	WIRE 0.22 10% 1/2W	
R611	⚠1-247-789-91	CARBON 18 5% 1/4W	
R612	⚠1-247-795-91	CARBON 33 5% 1/4W	
R613	⚠1-215-904-51	METAL OXIDE 100K 5% 2W	F
R614	⚠1-247-815-91	CARBON 220 5% 1/4W	
⧓R651	⚠1-215-886-51	METAL OXIDE 100 5% 2W	F
R652	⚠1-215-886-51	METAL OXIDE 100 5% 2W	F
R653	⚠1-260-107-91	CARBON 4.7K 5% 1/2W	
R654	⚠1-260-107-91	CARBON 4.7K 5% 1/2W	
R655	⚠1-247-867-91	CARBON 33K 5% 1/4W	
R656	⚠1-247-867-91	CARBON 33K 5% 1/4W	
R657	⚠1-247-837-91	CARBON 1.8K 5% 1/4W	
		<VARIABLE RESISTOR>	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
RV651	⚠1-237-443-11	RES, ADJ, CARBON 1K	
		<TRANSFORMER>	
T601	⚠1-450-760-11	TRANSFORMER, CONVERTER	

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MISCELLANEOUS
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	⚠.1-413-720-22	SWITCHING REGULATOR (SOPS-1021)	
	⚠.1-426-043-12	COIL, DEGAUSSING	
	⚠.1-451-319-22	DEFLECTION YOKE (Y9FXC)	
	1-452-126-11	MAGNET	
	1-941-913-02	CORE ASSY, FERRITE	
	⚠.8-737-154-05	PICTURE TUBE (A20JKU10X)	

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ACCESSORIS & PACKING MATERIALS
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PART NO.	DESCRIPTION	REMARK
⚠.1-590-910-11	CORD SET, POWER (10A/250V)	
2-990-241-02	HOLDER (A), PLUG	
3-170-078-01	HOLDER (B), PLUG	
3-756-716-41	MANUAL, INSTRUCTION	
*3-704-301-01	BAG (STANDARD), PROTECTION	
*4-034-955-01	CUSHION (UPPER) (ASSY)	
*4-034-956-01	CUSHION (LOWER) (ASSY)	
4-041-087-01	INDIVIDUAL CARTON	